GOODS AND SERVICES TAX (GST) AND ITS POTENTIAL IMPACTS ON MALAYSIAN INFLATION

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Thesis Submitted to School of Economics, Finance and Banking,
Universiti Utara Malaysia,
in Partial Fulfillment of the Requirement for the Master of Economics

Kolej Perniagaan
(College of Business)
Universiti Utara Malaysia

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Tarikh: **29 Januari 2018**
(Date)

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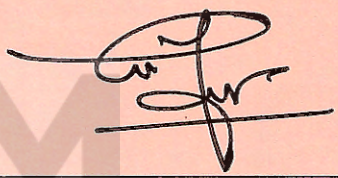
Tajuk Tesis / Disertasi *(Title of the Thesis / Dissertation)*	:	**Good and Services Tax (GST) & Its Potential Impacts on Malaysian Inflation**
Program Pengajian *(Programme of Study)*	:	**Master of Economics**
Nama Penyelia/Penyelia-penyelia *(Name of Supervisor/Supervisors)*	:	**Assoc. Prof. Dr. Hussin Abdullah**



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ABSTRACT

A modern consumption tax known as Goods and Services Tax (GST) or Value Added Tax (VAT) is an indirect tax levied at every stage of production chain. Malaysian GST was introduced on 1st April 2015 with the introductory rate of 6 percent consisting of the standard rate, zero-rate and exempted rate type. Various research has been done to study the economic impact of GST. This study examines the potential impacts of GST in Malaysia with the focus on the inflationary effect towards the economy. The statistical analysis utilized a combination of monthly data spanning from year 2015 to 2018, and forecast data, to measure the objectives of the research in investigating whether Malaysian GST will be inflationary or otherwise. The analysis was conducted to empirically determine the inflationary impact of GST in the short term and long term using Autoregressive Distributive Lagged (ARDL) approach through Bound Testing together with other explanatory variables in the framework of a combination of structuralist, monetarist and fiscalist elements in the model namely unemployment rate, money supply, and import. The Augmented Dickey Fuller (ADF) unit root test was applied to identify the stationary properties of the tested time series variables. The empirical results found cointegration in the series, and the study reveals that the inflation will increase by approximately 0.49 percent in the short run and 0.11 percent in the long run as a result of GST. Lastly, the CUSUM and CUSUMQ graphs confirm that the estimation is structurally stable. The findings shed new insight and lay out a clear picture for Malaysian regarding the inflationary impacts of GST.

Keywords: GST, VAT, inflation, bound test

ABSTRAK

Cukai kepenggunaan moden yang dikenali sebagai Cukai Barang dan Perkhidmatan (GST) atau cukai nilai ditambah (VAT) merupakan cukai tidak langsung yang dilevi di setiap peringkat rantaian pengeluaran. GST di Malaysia telah diperkenalkan pada 1 April 2015 dengan kadar pengenalan sebanyak 6 peratus yang terdiri daripada tiga jenis kadar iaitu kadar *standard*, kadar sifar dan kadar pengecualian. Pelbagai kajian telah dijalankan untuk mengkaji kesan GST ke atas ekonomi. Tesis ini akan mengkaji kemungkinan kesan GST terhadap ekonomi Malaysia dengan tumpuan kajian kepada kesan GST terhadap inflasi. Bagi mencapai objektif kajian, analisis statistik telah dijalankan menggunakan gabungan data bulanan daripada tahun 2015 sehingga tahun 2018, dan data ramalan, bagi menganalisis kesan GST terhadap inflasi di Malaysia. Analisis statistik untuk menentukan kesan inflasi daripada GST dalam jangka pendek dan jangka panjang dilaksanakan dengan menggunakan kaedah *Autoregressive Distributive Lagged (ARDL)* melalui kajian *Bound Test* bersama-sama dengan gabungan elemen *structuralist*, monetari dan fiskal di dalam model kajian. Kombinasi pembolehubah-pembolehubah ekonomi iaitu kadar pengangguran, bekalan wang, dan import juga dimasukkan di dalam model kajian. Ujian akar unit *Augmented Dickey Fuller (ADF)* digunakan untuk mengenal pasti sifat pegun siri yang diuji. Hasil kajian empirikal menunjukkan kointegrasi dalam siri data dan kajian menunjukkan bahawa inflasi akan meningkat sekitar 0.49 peratus dalam jangka masa pendek dan 0.11 peratus dalam jangka panjang kesan daripada GST yang dilaksanakan. Akhir sekali, graf ujian stabiliti *cumulative sum (CUSUM)* dan *cumulative sum square (CUSUMQ)* mengesahkan bahawa anggaran adalah stabil secara struktur. Penemuan ini akan memberi gambaran baru dan jelas kepada rakyat Malaysia mengenai kesan inflasi melalui GST.

Kata Kunci: cukai barangan dan perkhidmatan, inflasi, kointegrasi

ACKNOWLEDGEMENT

All praise to Allah S.W.T., the creator of the world, and blessing and peace upon our prophet Muhammad S.A.W., for giving me the strength and ability to start and complete this research work as planned. Apart from the efforts of me, the success of this research depends largely on the encouragement and guidelines of many others. I take this opportunity to express my gratitude to the people who have been instrumental in the successful completion of this research. I would like to show my greatest appreciation to my supervisor Prof Madya Dr. Hussin Bin Abdullah. I cannot say thank you enough for his tremendous support and help. I feel motivated and encouraged with hir feedbacks regarding my research. Without his encouragement and guidance this research would not have materialized. In addition, I would also like to express my special thanks to my parents Zainol Bin Ahmad and Che Su Binti Din for their loves, moral and financial support in order to boost up my spirit to complete this academic research successfully. The guidance and support received from all the members who contributed and who are contributing to this research, was vital for the success of the research. I am grateful for their constant support and help. Thank you to all of you that has involved directly or indirectly in this research. May Allah SWT bless all of us.

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ADF	Augmented Dickey Fuller
ARDL	Autoregressive Distributive Lagged
BNM	Bank Negara Malaysia
BT	Business Tax
CUSUM	Cumulative Sum
CUSUMSQ	Cumulative Sum of Square
ECM	Error Correction Model
ECT	Error Correction Term
GDP	Gross Domestic Product
GST	Goods and Services Tax
IMF	International Monetary Fund
IRAS	Inland Revenue Authority of Singapore
KPMG	Klynveld Peat Marwick Goerdeler
RMCD	Royal Malaysian Customs Department
SST	Sales and Services Tax
UCEM	Unrestricted Error Correction Model
VAT	Value Added Tax

CHAPTER 1

INTRODUCTION

1.0 Introduction

Chapter 1 will give a brief insight of the Malaysian goods and services tax (GST) in general. It also covers the background of the study, research problem, research questions, research objectives, significance of the research and scope of this research.

1.1 Backgrounds

Fiscal policy such as tax reformation is one of the moves made by the government of a country across the globe in attempts to influence country's economic condition and position. The main goal for such policies are taken is to combat economic problem such as inflation and thus increasing the economic growth of the country.

Tax is a major tool in an economy of a country and it is one of the important economic instruments for generating revenue. Taxes in Malaysia are a crucial source for government revenue in funding its expenditure to the country and its people as well to improve country's global competitiveness (Roshaiza and Nanthakumar, 2008). In Malaysia, tax revenue stream contributed for almost 70% of government's revenue that obtained from both direct and indirect taxes (Abdul Aziz, 2013). Nevertheless, it is learned from Bank Negara Malaysia 2010 Annual Report that the ration of revenue collection derived from taxation in Malaysia to Gross Domestic Product (GDP) which is 19.5% is recorded the lowest as compared to others 34 developed countries (Bank

Negara Malaysia, 2010). In respect to this concern, the direct tax base for Malaysian also only covers approximately 1.7 million to the total of approximately 12 million

workforces in Malaysia (Lee, W. L., 2012). According to Finance Ministry tax division under Secretary Datuk Siti Halimah Ismail, revenue contribution generated from former indirect taxes (sales and services tax) had declined significantly over the past few decades (Isabelle Lai, 2014). Despite a strong business operation and productivity in the economy, the revenue collection of sales and services taxes is declining mainly due to the narrow base of sales and services tax (SST) itself (Victor, 1997). Those evidence factors are urging the Malaysian government to reform its public finance tool of the country for the benefits of nation at large.

Despite the fact that the tax revenue collection is not adequately sufficient, another form of large revenue stream obtained from the government is the revenue gained from non-taxes resources such as oil or petroleum revenue. In 2013, Malaysia has recorded a gain from oil revenue of 30.6% of total revenue. However, the revenue from natural sources is indeed will scarce over time (Victor, 1997). In fact, the higher reliance on such revenue makes the government more exposure to the fluctuation of global crude oil price. A sudden and significant drop in the oil price will alter financial income and expenditure of a country (Bank Negara Malaysia, 2010). The fluctuation or persistent of global oil price and in fact that the government has no control over the price eventually will affect Malaysian economy directly. Given the situation where the high oil price occurred in an economy, it will drive up the high price of other commodities and lastly will raise the cost of production for the firms. The high cost of production is then being transferred in form of higher price of goods and services offered in the economy. As an

end user, consumer is likely will alter their spending pattern in respond to expensive price offered by businesses. The reduction in spending pattern made by consumers will eventually lower the business's income and therefore less amount tax paid to the government by businesses due to the reduction revenue gained.

The Malaysian tax policy is remained unchanged for the past few decades. As the time flown, the Malaysian economy has fundamentally changed over time with variety of complexity of business operations. However, Malaysian tax system is not kept pace over the changes within its economy landscape. Such reformation could often take place by shifting the direct to indirect tax in form of broadening the tax base and in line with lowering the income tax rate (Predeeben Kannan, 2010). The Malaysian Government has the intention to reform our tax structure since long time ago. The effort of Malaysia Government in introducing the new tax system was reflected since 1980s. The goods and services tax (GST) or its generic name across European known as Value Added Tax (VAT) first looks were announced by former Malaysian Minister of Finance, Tun Zaim Zainuddin in 1988 where the government is considering implementing the GST. The deliberating of such move has been debated for several years have finally answered. Budget 2014 that was tabled on October 25th, 2013 has surprised Malaysian with the introduction of GST that has been implemented effectively on April 1st, 2015. The initial introductory flat rate of GST is at 6%, 2% higher than the previous suggestion rate at 4% which was set by the government before the announcement. GST as a new consumption tax will be replaced the existing Malaysian Sales and Services Tax (SST).

Despite to reduce the dependency on direct tax revenue and oil revenue, one of the core reasons for such tax reformation made by the government is to overcome weaknesses of

SST such as cascading tax, compounding and pyramiding taxes, tax evasion, leakages via transfer pricing that therefore could lead to various distortions in the economy (Shahariah, Sabariah and Nur Syuhadah, 2017; Asrul, Rushdan, Safwan and Cherine, 2015; Narayanan, 1991). GST is also claimed to be a fairer and efficient tax system as compared to the previous consumption taxes. Under GST system, it will reduce the business cost since GST is claimable in term of the business can recover the input tax on raw materials and expenses through manufacturer, retailer and wholesaler. In contrary, in SST system, some businesses had to pay multiple taxes and high rate of tax on tax. In addition, GST is also said to be a more transparency tax as compared to SST as the consumers will be exposed to the information of goods are subjected to tax or not and the amount tax paid by them through GST system (Asrul, Rushdan, Safwan and Cherine, 2015). Hence, the implementation of goods and services tax in Malaysia is aimed to diversify Malaysian revenue sources and combat the weaknesses found in the old consumption taxes in hope to beneficial the Malaysians at large.

1.2 The Born of Malaysian GST

1.2.1 Background Malaysian GST

The Malaysian Government has officially expressed the intention to introduce the GST as a replacement tax on October 25th, 2013. GST implementation has taken effect on April 1st, 2015 with the 6% introductory rate. All parties that involved in businesses that are eligible for GST are urging to register for GST system starting October 2014. The 6 months period before GST takes place was given to businesses to prepare and upgrade their tax system. This is then followed by the 3 months compulsory GST registration

notice given by Malaysian Government for businesses with the prescribed threshold to register GST before GST begin in Malaysian taxing system.

Generally, goods and services tax (GST) or well-known as Value Added Tax (VAT) in worldwide is basically a modern tax system that has three main points in its meaning which are i) a consumption tax, ii) a broad-based tax and iii) a multi-stage tax. GST is a consumption tax where it will be levied on accordance to the spending made on goods and services in economy. It is also considered as a broad-based tax since it will be covered the whole sectors in Malaysian economy. MeanWhile, the multistage GST will be charged on the supply of goods and services at every stages of a supply chain. In effect, every business has to levy and collect the tax on the sales of supply goods and services which is subjected to GST. This occurred when the tax paid is made in stages by the intermediaries through the production and distribution process. The tax payment made is not a cost to the intermediaries since GST incurred from production inputs are claimable where the business involved are allowed to claim a credit on any GST paid on the purchase of goods and services (Asrul, Rushdan, Safwan and Cherine, 2015). Yeung (2010) also defined that GST as a consumption tax is a tax that will be charged in a value added form where the consumers need to pay the GST as a percentage of the value of goods and services on every production level.

Malaysian GST already took its place in Malaysia economy landscape for several years since its role in the Malaysian taxation system begun on April 1st, 2015. The regulatory body that is having control regarding the obligation of GST laws, regulations and revenue collection is Royal Malaysian Customs Department (RMCD). RMCD acts as

Malaysian Government tax agent mainly indirect tax that provides services mostly to consumers, businesses and industries in giving the GST guidance and other services.

The operation of GST system in Malaysia is regulated and guided under the GST Act 2014 that replacing the Sales Tax Act 1972 and Service Tax Act 1975. Under Malaysian GST mechanism, a 6% will be imposed on the value of supply goods and services in the economy. Precisely, the scope of GST in Malaysia as follows i) Goods and services by taxable supply ii) Produced in business by taxable person iii) Goods and Services produced and consumed in Malaysia. Besides, the GST system is fall under indirect tax since the collection of tax paid by the taxpayers is collected via traders or suppliers instead of paying directly to the government. The businesses are acting as tax collectors on behalf of the government through the sales of goods or services provided to consumers.

Under the GST Act, not all businesses have the rights to be a tax collector for the government. The Goods and Services Act 2014 bas specifically indicated several conditions that need to be fulfilled. One of them is the businesses must sell taxable goods or provide taxable services which mean that the businesses are either a supplier or making a supply. Next is, the businesses must be a GST registered companies. In addition, the business also must gain a turnover at minimum of RM 500, 000 a year for their taxable supply. The calculation of RM 500,000 threshold is made based on sales revenue for previous 12 months and the sales forecasting over the next 12 months. The prescribed turnover condition is achieved when the sales are recorded for the past 12 months and the estimated sales for the next 12 months is reach the figures stated. However, the voluntary registration is made available for businesses with below

prescribed threshold. Once the businesses are GST registered, they need to implement the GST system for at least 2 years. In addition, the business is required to charge and collect GST on taxable supplies and qualified to claim their input tax credit.

On top of that, the prescribed threshold is set a minimum of RM 500,000 in order to ensure that the small business team is GST free from bearing the GST registration and compliance costs under the new GST system. When all the conditions are satisfied, the business is obligated to charge goods and services tax for each supply made. The tax is collected through a specific period of time from the consumers before it being transferred to the government account in form of the submission of tax returns and payments.

To conclude, Malaysian GST is charged on the supply of goods and services in Malaysia at the standard rate of 6% by the registered business under GST Act. Malaysian also needs not to pay for 6% GST if goods and services are categorized under zero rated supplies and exempt supplies. Zero rated supplies is a taxable supply that allows businesses to claim the input tax credit in production but no output tax is allowed to charge on consumers. In contrary, the exempt supplies is not a taxable supply which businesses not allow to claim the input tax credit as well as charged the output tax to consumers.

Table 1.1 is the illustrations that summarized the GST implementation milestone in Malaysia up until GST takes effects. Meanwhile, Table 1.2 provides a brief glance of Malaysian GST.

Table 1.1
Malaysian GST Timeline

GST Timeline	Process
GST Announcement	The GST implementation date was announced by Malaysian Prime Minister during 17 months before GST takes place on October 25th, 2013
	Malaysian GST to be effective on April 1st, 2015 at 6% GST rate
GST Registration	GST registration begin on October 2014, 6 month period before GST takes place
	3 months period before GST implementation is given for business that eligible to register for GST. This is an adequate time for business to prepared for GST
GST Commence	April, 1st 2015 was the official date for GST role in Malaysian economy
	A Registered business starts to levy GST rate accordingly

Table 1.2
Malaysian GST

Taxes Name	Goods and services tax (GST)
Date Introduced	April1st, 2015
Administrated Agent	Royal Malaysian Customs Department (RMCD)
GST rate: **Standard** **Other**	 6% Zero-rated (0%) and exempt-rated
GST Return Periods	Monthly if annual sales turnover is RM 5 million or more Quarterly if annual sales turnover is less than RM 5 million
GST Registration Threshold	Annual taxable turnover exceeds MYR500,000
GST Recovery	No (unless the non-established business is registered for GST in Malaysia)

1.2.2 Types of Malaysian GST Supply

Principally, GST registrant businesses are compulsory to charge the tax on their output of taxable goods and services supplied to consumers. The GST levied on consumers is known as output tax while GST incurred for the purchases of goods and services during production process in termed as input tax. The input tax incurred in the business operation is claimable and known as claim tax credit. On top of that, the business must make a payment of the difference between output and input taxes. If the input tax is over than output tax, the businesses are eligible to claim the mentioned input tax credit.

GST in Malaysia may be varying according to the three different scope and mechanisms. The three types of GST for Malaysia are standard-rated supplies, zero-rated supplies and exempt supplies. Those three scopes will be taxed differently based on their own characteristics.

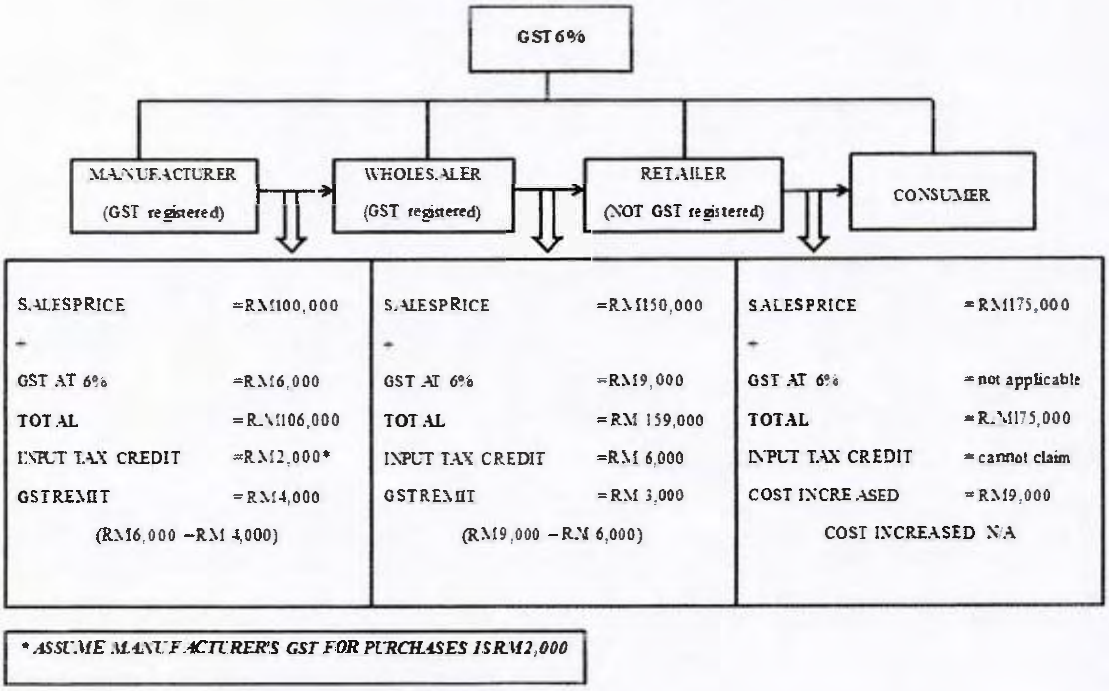

Figure 1.1
Unregistered Business in GST Mechanism
Source: Royal Malaysian Customs Department, 2013

Figure 1.1 illustrated the difference between registered person and not registered person under GST system. Assume that manufacturer and wholesaler is registered person and retailer are not a registered person. Based on Figure 1.1, we can see that a registered person is eligible to claim the input tax credit that is incurred in the production process and only will pay the GST after minus the claimable credit. On the other hand, the retailer (not a registered person) will bear the RM9, 000 increased in production cost. Since they are not liable to claim the increased cost paid to the wholesaler, they have to absorb the cost. They are also prohibited to charge the GST on consumer as to transfer the increase in their production cost.

The 3 main scopes of GST charged are explained as follows based on types of supply

1. Standard-rated supplies

The 6% GST rate will be charged on the taxable supplies of goods and services under the standard-rated supplies. A registered person has the power to collect GST on behalf of government and also is permitted to claim back the input credits that incurred in their supply process. Table 1.3 simplified the characteristics of standard type of Malaysian GST.

Table 1.
Malaysian Standard-Rated GST

GSTRate	6% GST on final price
Goods Category	Households items, utensils, clothing and accessories
GST Principle	A 6% rate charged on goods and services at every stage of supply chain Every party except final consumers can claim back input tax

2. Zero-rated supplies

Zero rated supplies works at the 0% rate of GST on the taxable goods and services. This means that businesses will not collect any tax on their supply but are allowed to claim the inputs costs used in the production process. Table 1.4 reported the Malaysian Zero-rated GST.

Table 1.4
Malaysian Zero-Rated GST

GSTRate	0% GST on final price
Goods Category	Basic food items, unprocessed food items, most education materials
GST Principle	A 0% rate charged on goods and services GST is not charged on final consumers Businesses can claim back input tax credit

3. Exempt supplies

No GST charged will be imposed on the supplies of goods and services under the exempt supplies hence, no GST will be collected by the businesses. There are two types of supply that are not falling under subject of GST namely zero rated supplies and exempt supplies. Therefore, no GST will be paid on goods and services under those supplies. Zero-rated supplies applied a 0% GST on taxable supplies where the businesses can claim the input tax credits during their supplies process but not eligible to charge the output tax on consumer. Meanwhile, exempt-supplies is totally not a subject to GST and it is a non-taxable supplies. Businesses also are prohibited to claim the input tax credit in supplies process as well as charging the output tax on consumer. Furthermore, there are also several supplies in the economy are not a subject to GST including the non-business transaction, goods and services that are sold from outside Malaysia and the services made by the government sector. Table 1.5 simplified the characteristics of exempted type of Malaysian GST.

Table 1.5
Malaysian Exempted GST

GSTRate	No GST charged for consumer
Goods Category	Residential property, healthcare
GST Principle	Goods and services are nontaxable and not subject to GST The final party in supply chain cannot claim input tax credit even if it is incurred

1.2.3 The Differences of Malaysian Sales and Services Tax and Goods and Services Tax

Indirect tax is the common tool used by the government of a country in generating revenue as it is the most convenient tax exercise for the mentioned purpose. Sales tax and services tax has been implemented in Malaysian economy for several decades which was regulated and operated under Sales Tax Act 1972 and Service Tax Act 1975. Sales tax mechanism is applicable when all goods were under subject to it unless specifically prescribed. On the other hand, services tax operated in opposite concept as opposed to sales tax where only services specifically prescribed by the act were taxed. However, both taxes were a single-stage tax where sales tax is applicable when there is a sale and services tax is due when payment is received (Mansor, Tayib and Yusof, 2005). The are several distinctions between under the previous regime of indirect tax, which is, SST as compared to the new regime, GST that are briefly compared in Table 1.6 below.

Table 1.6
Difference between SST and GST

Sales and Services Tax (SST)	Goods and Services Tax (GST)
SST rate vary which a 5%, 10% or specific rate	Single rate at 6% with zero-rated a and exempt rate
Single-staged tax	Multi-staged tax
Non transparent tax system	Transparent tax system
Tax borne by all businesses and individuals	Tax borne by end users
Sales tax is imposed on one level of production which is it normally occurred at the output level where when goods are been taken out from factory. Service tax is imposed on certain services when it served to the consumers.	GST is a consumption tax where it holds the concept of value added at each level of supply chain from production to consumers. It is charged on goods and services at every level of production including export goods and services.

1.2.4 GST in Malaysian Neighborhood Country

The imposition of commonly used indirect tax regime in worldwide namely Value Added Tax (VAT) and its synonym name, Goods and Services Tax (GST) across the world has risen to over 160 countries throughout the globe. This implied that GST is a popular tax policy among the government worldwide as a tool for revenue booster and fiscal reformation. Table 1.7 reported some of the countries implemented GST/VAT including Malaysia with respect to their respective rate.

Table 1.7
GST/VAT in Malaysian Neighborhood Country

No	Country	Year Implementation	Initial Rate (%)	Current Rate (%)
1	Japan	1989	5	5
2	*Malaysia*	*2015*	*6*	*6*
3	Singapore	1993	3	7
4	Thailand	1992	7	7
5	Indonesia	1984	10	10
6	South Korea	1977	10	10
7	Australia	2000	10	10
8	New Zealand	1986	15	15
9	China	1994	17	16

Since its introduction to the world back in 1948, GST is being a part of tax system across each country's economy. The popularity of GST system is undeniable. As depicted in Table 1.7, GST rate is varying across Malaysia and its neighborhood countries. Malaysia GST rate is amongst the lowest within the Southeast Asian countries. For instance, Singapore and Thailand have GST rate of 7% while Indonesia is 10%. Furthermore, Japan has a GST rate of 5%, which amongst the lowest as compared to other developed countries. For example, New Zealand's GST rate is at 15% while Australia has GST rate at 10%. Obviously, as we can see Malaysia has a much lower GST rate among other developing country.

Nonetheless, the GST rate may change over time. As reported from Table 1.7, we can conclude that, there are several countries that revised their GST rate after GST implementation. For example, Singapore GST rate has changed over time. Singapore GST was introduced at 3% rate in 1994, increased to 4% in 2003, 5% in 2004 and was

increased again to 7% in 2007 (Inland Revenue Authority of Singapore (IRAS), 2009). Although the GST rate in Singapore was raised for several times, still it is among the lowest as compared to other developed countries. Not to mention, there is also country that decreasing their GST rate such as China. Recently, China government has announced the reduction in GST rate to one point from 17% to 16% effective 1st May 2018. The reduction decision was made as to boost up business production and innovation in China's economy in line with reducing the burden of the businesses for several sectors in the economy (VAT changes in China starting from May, 2018).

Table 1.8
GST/VAT across the World

No	GSTCouutry	GSTRate (%)	GDP Per Capita (USD)**
1	Singapore	7	90,500
2	Norway	25	70,600
3	Sweden	25	51,300
4	Germany	19	50,200
5	Australia	10	49,900
6	Denmark	25	49,600
7	Canada	5	48,100
8	United Kingdom	17.5	43,600
9	Japan	5	42,700
10	Italy	20	38,000
11	Hungary	25	28,900
12	*Malaysia*	*6*	*28,900*
13	Thailand	7	17,800
14	China	16	16,600
15	South Africa	14	13,400
16	Indonesia	10	12,400
17	Philippines	12	8,200
18	India	12.5	7,200
19	Vietnam	10	6,900

**GDP Per capita in term of purchasing power parity basis

GST system is not the only system that is adopted in developed countries with high per capita income but also in countries that has lower per capita income. Many also question whether the GST rate will be higher if a GDP per capita of a country is higher. Table 1.8 reported the GST rate across selected countries with respect to their GDP per capita income. As we can see, India recorded its per capita income at USD7, 200 but its GST rate is amongst highest than developed country which is 12.5%. In contrary, although Canada is the among a higher GDP per capita earning countries with total of USD48,100, its GST rate 5% is amongst the lowest in the world.

On top of that, the only high GDP per capita earning countries with a highest GST rate are Sweden, Norway and Denmark with GST rate at 25%. In comparison, we can see that Indonesia and Vietnam with their respective GDP per capita earning of USD12, 400 and USD6, 900 shared a similar GST rate with Australia at 10% with Australia GDP per capita earning recorded at USD49, 900. Therefore, we can conclude that there is no relation between GDP per capita earning and GST rate.

1.3 Malaysian Perception on Goods and Services Tax (GST)

Many Malaysian perceived that the introduction of GST in Malaysia will lead to the increase in the price of goods and services available in the market despite the items are subjected to GST or not. This is the typical feedback among Malaysian when Malaysian government announced to implement the GST in this country.

The government needs to pay more attention on the response of the public regarding the implementation of GST as to gain their support on the new tax reform in Malaysia. The

government also has to ensure the consumer understanding of GST as new tax system in Malaysia in order to avoid any speculation and misunderstanding among them.

In Malaysia, there are several surveys and researches that were conducted by the researcher about the readiness, perception, awareness and acceptance towards the implementation of GST in this country before GST play its role in Malaysia economy.

A structured survey has been conducted by Merdeka Center for Opinion Research on Malaysian feedback in regard of GST in Malaysia. It was conducted in 2014 by using a total of 1009 sample across ethnicity, gender and age. The survey covered the questions of understanding and acceptance of Malaysian GST.

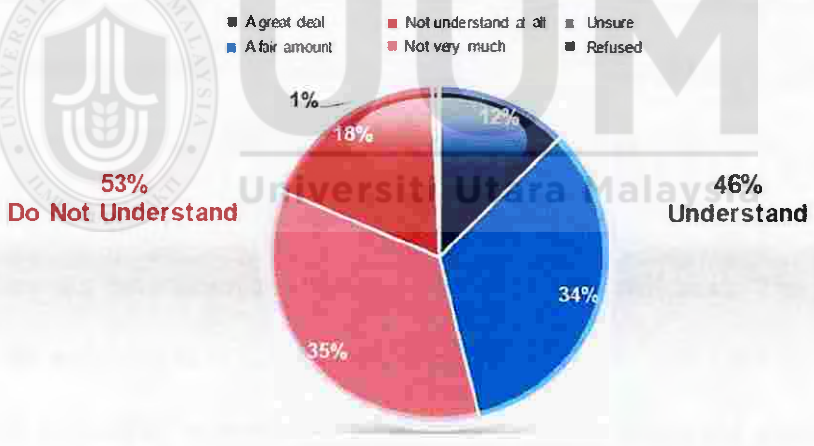

Figure 1.2
Malaysian Opinion on Understanding of GST
Source: Merdeka Center of Opinion Research, 2014

GST acceptance among Malaysian is mainly due to their fear of the rise in price of goods and services in the market as well as their lack of understanding on the purpose of GST that will be implemented.

Furthermore, the study made by Amanuddin Shamsuddin, Muhammad Ishfaq Meor Ruslan, Afifah Abd Halim, Nur Fatin Zahari and Nurul Farhana Mohamad Fazi (2014) also reported that Malaysian, specifically educators in Malaysia have low and moderate level of understanding and acceptance of GST implementation in Malaysia. The disagreement pertaining to GST by educators in Malaysia is due to insufficient information in regard to the working of GST in Malaysia received by them.

The government needs to win the agreement from the public as a whole in order to gain the efficiency of GST system in Malaysia. Most of the Malaysian especially those in low and middle income earners are very worried about the hiking is price level in the economy as they have to pay more when the price of goods and services increased. Due to this, it seems that the burden will majorly bear by low and middle income groups as compared to high income groups.

1.4 GST Issues

The introductory of Malaysian GST has raised much concern among Malaysian in general. Basically, Malaysian is very concern regarding the status of the price of goods and services after GST is being implemented. The increase in the price of goods and services in the economy is the main concern among them since the burden of hiking in price will be borne by them as a consumer. One of the issues that were highlighted by many is the regressiveness of GST. A regressive tax is defined as a tax that will be borne more by the lower income households rather than the higher income households. GST is typically regarded as a regressive tax due to this tax is levied to consumption and the fact that the propensity to consume tends to decrease as the income increase hence, GST is often described as regressive (Masayuki Tamaoka, 1994).

Regressive issue will impact directly on consumer especially households in the lower and middle income groups. Thus, the burden of 6% GST may hurt them as compared to the higher income groups. However, the Malaysian government guaranteed that the burden of the increase in price will not hurt the consumer much as there are several groups of goods and services are categorized as zero and exempt rated charged of GST where no GST will be levied on those groups. The list of goods and services that are subject to 6% GST and 0% GST also has been released by the government through RMCD website for consumer guidance. In general, there are items in the goods and services groups that will be not be subjected to the 6% GST such as basic foods, healthcare, medical and education. Those goods basically consumed more by the poor and middle income groups hence, the regressiveness of GST can be evaded.

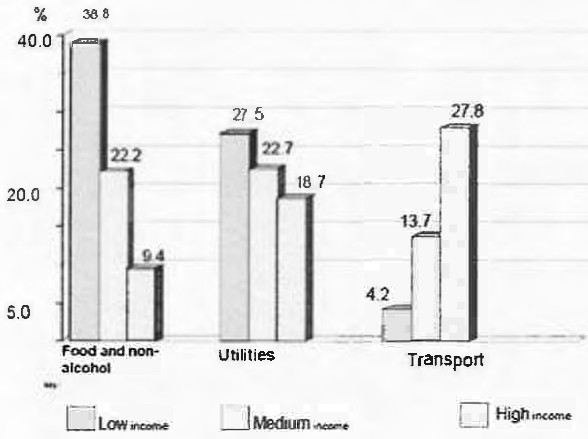

Figure 1.4
Expenditure Patterns of Malaysian
Source: Institute of Strategic and International Studies (ISIS) Malaysia, 2014

Figure 1.4 showed the percentage consumed by the low, middle and high income households on the expenditure made on three goods category namely food and non-alcohol, utilities and transport. As we can see from the bar chart in the above figure, nearly 40% of foods and non-alcoholic goods are consumed mostly by the poor households. As we noted, the items are under zero-rated GST thus, no GST will be paid by the consumer.

Table 1.9
Tax Incidences

LOW INCOME GROUP			HIGH INCOME GROUP		
INCOME	RM2,000	TAX INCIDENCE AT6%GST	INCOME	RM12,000	TAX INCIDENCE AT6%GST
EXPENDITURE ON ZERO-RATED ITEMS	RM 640.00	RM 0.00	EXPENDITURE ON ZERO-RATED ITEMS	RM 1093.86	RM0.00
EXPENDITURE ON EXEMPT ITEMS	RM 707.40	RM12.73	EXPENDITURE ON EXEMPT ITEMS	RM 2155.08	RM27.59
EXPENDITURE SUBJECT TOGST	RM 652.60	RM139.16	EXPENDITURE SUBJECT TOGST	RM 5751.06	RM345.06
TOTAL		RM151.89	TOTAL		RM 372.65
TOTAL EXPENDITURE	RM2000.00		TOTAL EXPENDITURE	RM9000.00	
TAX BURDEN AS PERCENTAGE TO EXPENDITURE		2.59%	TAX BURDEN AS PERCENTAGE TO EXPENDITURE		4.14%

Table 1.9 illustrated the tax burden as a percentage of expenditure that has to be paid by lower income and high income groups. As we can conclude from the above table, we can see that the total 6% GST rate as the percentage of expenditure on three types of supplies is higher for those in high income quintile. Therefore, this illustration explained that the tax incidence of GST will be less borne by those in low income groups. However, this illustration may be slightly differ in the economy of an entity of the households based on spending attitudes as we understood that the households income and expenditure is largely depends on their standard of living and spending pattern. The living standard of a household reflected their purchasing power in buying the goods and services despite the total income they earned.

The GST mechanism in Malaysia also has been provoked by most Malaysian because they are reluctant to accept the reformation of Malaysia tax system due to the misconception that GST will be inflationary which lead to the double taxation or cascading effect and therefore this will affect their cost of living. This is another issue that plagued the thoughts of Malaysian. According to Ariff (2009), GST is not a cost to business and hence, business will not simply pass the burden of GST unto consumers in form of high selling price. He also argued that GST system will impact Consumer Price Index or inflation. Cascading impact shall not happen along the production and supply stages under GST system since businesses can claim back the input taxes incurred. As far as we concern, GST merely a tax on consumption not production thus the GST does not reflected the permanent cost to business. Therefore, the increase in selling price of goods and services is not necessarily happen under GST system.

Many economists believed that inflationary impacts on goods and services prices largely depend on the mechanism and working of GST system of a country as well as the purchasing power of the households and for that inflation shall not necessarily to happen (Syed A. Basher, 2008). For instance, in Australia case, a significant impact of inflation was found in September 2000 as soon as GST was introduced in July 2000. The study found that Australian inflation has increased by 2.6% between July and September 2000. This happened because households were rushed to make the advance purchasing before GST implemented since they believed the price of goods in the market will go up as soon as GST is implemented (Australian tax Office, 2002).

In order to further addressing the inflationary pressure of GST, Table 1.10 reported the relationship of GST introduced with changes in inflation rate for year before and year after GST implemented for selected countries.

Table 1.10
GST Rate and Inflation Rate for Selected Countries

Country and Current GST Rate	**Inflation Rate Before GST**	**Inflation Rate During GST**	**GSTRate After GST**	**Changes in Inflation Rate Before and After GST**
Singapore (7%)	1.0 (1992)	3.4 (1993)	3.7 (1994)	2.7
Australia (10%)	0.3 (1999)	2.6 (2000)	4.7 (2001)	4.4
United Kingdom (20%)	8.0 (1972)	7.3 (1973)	15.0 (1974)	7.0
Japan (5%)	0.3 (1988)	2.2 (1989)	2.3 (1990)	2.0
India 12.5%)	5.7 (2004)	4.2 (2005)	6.4 (2006)	0.7
Indonesia (10%)	34.8 (1973)	46.5 (1974)	11.2 (1975)	-23.60
Philippines (12%)	6.2 (1997)	22.4 (1998)	6.6 (1999)	0.4
Thailand (7%)	5.7 (1991)	4.5 (1992)	3.3 (1993)	-2.4
Malaysia (6%)	*3.2 (2014)*	*2.1 (2015)*	*2.1 (2016)*	*-1.1*

Table 1.10 reported the inflation rate during year before GST implemented, year GST implemented and year after GST implemented for selected countries across the world including Malaysia with respect to their current GST rate. Furthermore, the difference of inflation rate during year after and before GST also computed to analyze whether the pattern of inflation changes is similar across the selected country under GST system.

As depicted in table above, it clearly shows that the changes of inflation due to GST is vary across the country where some country experienced positive changes, for instance, Singapore, Australia, United Kingdom, Japan, India and Philippines. On the other hand, Indonesia, Thailand and Malaysia experienced negative changes in inflation rate. Malaysia inflation as measured by Consumer Price Index (CPI) has dropped from 3.2% to 2.1% mainly due to a sharp decrease in global oil price that offset the impact of the GST introduction in Malaysian economy. Although many Malaysian blamed GST will cause inflation and slow down the domestic demand, nevertheless, GST only contributed 0.7% to headline inflation in 2015 and therefore GST is not the only cause to Malaysia inflation (Bank Negara Malaysia Report, 2015).

Despite the strong resistant from Malaysian due to GST will cause price of everyday goods to rise, another concern for Malaysian is the government might progressively revise the GST rate over the years after GST introduced. This is indeed might be happened for Malaysian case since it did happened for countries that had GST way early than Malaysia. Table 1.11 shows initial GST rate and current GST rate for selected countries.

Table 1.11
Comparison between Initial GST Rate and Current GST Rate

Country	Initial Rate (%)	Current Rate (%)	Difference (%)
Denmark	9	25	16
United Kingdom	8	20	12
Germany	10	19	9
Italy	12	20	8
Sweden	17.7	25	7.3
France	13.6	19.6	6
Spain	12	16	4
Singapore	3	7	4
Japan	3	5	2
Switzerland	6.5	7.6	1

Table 1.11 reported the changes in GST rate across selected countries that implement GST system. History showed that Denmark recorded the highest increase in GST rate from 9% to 25%, United Kingdom from 8% to 20%, Germany 10% to 19% and Italy 12% to 20%. Other countries that had increased the GST rate include Sweden, France, Spain, Singapore, Japan and Switzerland as reported in the above table. As far as we can see from other countries experiences, there is no doubt that GST rate might be revised over time. There is indeed a room for GST hike in Malaysia; however, the changes might not take place anytime soon. On top of that, Malaysian government stressed out that the GST rate would not be revised from its current level at 6% (Rahmah Ghazali, 2017; Esther Lee, 2018).

1.5 Research Problem

The predominant consumption tax known as GST have several aspects that need to pay an attention. One of the aspects is lies in the fact that GST will be inflationary. The inflation effect could be occurred if the effective rate higher than what we prevail before. Therefore, the tax administrators need to monitor on how price will spike after the imposition of the GST in their economy landscape in order to tackle inflationary problem that might exist.

Although GST implementation in Malaysia is not really matured yet, the analysis on the potential effects has to be carried out to further examine and estimate the effect of GST to the Malaysian economy. It is crucial to investigate the relationship of GST and macroeconomic impacts such as inflationary factor whether it is significant or the other way around. This analysis is important because the possible impacts of GST will affect the economy of Malaysia generally. Hence, the findings will give a clear picture on how the GST will give impact to the general price in the Malaysia economy landscape.

The effects that might be occurred with the introduction of GST in Malaysia are unpredictable since Malaysia is newly practiced this new tax system for the first time. The impacts of this new tax reform are bound to be uncertainty. However, past experienced in other countries that have long been adopted the GST tax system signified some of the effects to the economy that take place in their GST tax system. One of the major impacts of GST implementation is inflationary issues. International experiences from develop and developing countries show variety of inflation impact from GST. For instance, countries like Australia, Canada, Singapore, Japan, China and Maldives

resulted in inflation increased. Nevertheless, other countries such as Greece, Portugal, Thailand, New Zealand and Vietnam resulted in inflation decreased due to GST implementation (Prasad, Neeraj and Garima, 2017). Past experienced also showed mixed results of inflationary GST both in short run and long run. The GST implementation often said to occur in one-time increase in inflation of an economy and would not happened in annual event. The short term impact of GST is occurred when the consumers did the pre-GST spending rush resulted to the expected price increase in post-GST. On the other hand, the long run GST inflationary impact might occur due to inflation spiral in the economy where households demanded the increase in wages in order to cope with the rising in living cost (Alan, Ebel and Le 2005).

As soon as the GST tax system will be adopted in Malaysia the likelihood increases in most of the goods and services consumed by the consumers in the economy is huge. This is a major concerned that was voiced up among Malaysian. Some might dispute the fact that most of the essential goods and services will be exempted from GST charged and the zero-rated GST also will be levied under certain items, thus the possible raising in most of the price could be lower. Nevertheless, many Malaysia households are suspicious and questionable in regard what the exact items that might be classified as essentials and thus will be exempted from GST rate. Although some of the items will be categorized under the exempted items or zero-rated GST, the government, however should not ignore the possible chain reaction in the hike of price of non-controlled items. Hence, it is highly expected that the increases in the price of many consumer goods and services will be affected in the market. Due to this ascending in price will apparently will lead the inflation phenomena in the country.

The Malaysian government also claims that the price effects on consumers is reported to be minimal because basic and essential foods will be zero-rated, public amenities will be exempted, low production cost for businesses since GST paid on input can be claimed. However, the opponent's view argue that the increase in price still will be occurred especially on most of the essential items in the market and this in effect make the poor group suffered due to GST introduction.

Historically, in April 2015, the headline inflation for the month was reported at 1.8% YoY and 0.9% MoM where it is below the median estimate at 2.2%. Many agreed that businesses will take opportunity to increase the price after GST implementation, however, inflation data reported otherwise Kiasutrader, 2015). According to Bank Negara Malaysia 2015 report, the headline inflation in Malaysia has declined from 3.2% to 2.1% in the year of GST introduction in 2015. Although 2015 inflation data was low, the price increased reported to be more prevalent due to GST introduction and also accompanied by the weakening of Malaysia's currency and the higher prices of fresh foods (Bank Negara Malaysia, 2015). The government also agreed that the risk of GST price effect could be occurred especially in term of pricing behavior of businesses and the possibility of profiteering due to GST implementation. However, the enforcement of Anti-Profiteering acts has prevented the businesses to increase the price along with the GST charged. As per record, the GST effect has only added to 0.9% to consumer price inflation in April 2015 (Kiasutrader, 2015).

Major sentiments has voiced out their concern regarding the price hike after GST system playing its role in Malaysian economy landscape. This concern might be associated with the potential for businesses to mischarging customers by increasing the price of the

goods and services although GST introduction indeed is not a cost to businesses. Therefore, the researcher will investigate this issue empirically.

1.6 Research Questions

The research questions will be broke down into two categories namely general research question and specific research question. In general, researcher wants to investigate the possible effects of Malaysian GST in term of its inflationary effect of the tax. In specific, the research questions of the study are as follows:

i. Does Malaysian GST will lead to the inflation in Malaysian economy?

ii. What is the degree of inflationary impact due to Malaysian GST?

iii. What is an inflationary impact of GST in short and long run?

1.7 Research Objectives

The general objective of the study is to investigate the likelihood of the general price hike in Malaysian economy that cause by the newly implemented GST system in Malaysia.

The specific research objectives are as follows:

i. To analyze the relationship of inflation rate and GST implementation in Malaysia.

ii. To investigate the inflation impacts of Malaysian GST in the short run and long run.

1.8 Significance of Research

This study aims to examine the potential impacts of the implementation of GST in Malaysia and the study could contribute to the literature. By analyze the objectives of the study; the findings of the study will help in answering some of the potential problems cause by GST. Besides that, the policymakers will have a better understanding on the issues relating to this study and thus this will help them in tackling issues of the effects of GST in Malaysia.

A depth understanding of the impacts of GST in Malaysia is important in order for the policymakers to formulate appropriate policies as to prevent or lowering the effects of GST in Malaysian economy. Therefore, this study aims to provide an aid for policymakers in their economy decision making by giving a clear picture on how GST could affect the economy. This is to ensure the economy of Malaysia is stable without the negative effects of economic due to the GST implementation.

Furthermore, the findings also will provide a big picture to the Malaysian taxpayers relating the issues arise in GST. This will give them a better understanding of how GST works and how it would affect them in the future. A clear understanding of GST is important for the Malaysian taxpayers to understand as to make sure that they will not confuse with GST system in Malaysia.

1.9 Scope of Research

This study will concentrate on the impacts of Malaysian GST in term of inflationary. The study also will use the time series data macroeconomics indicator in order to calculate the objectives of the study. The study also limited to the inflationary impact of GST in Malaysia.

CHAPTER2

LITERATURE REVIEW

2.0 Introduction

Chapter 2 provides a brief review of past findings that are related to this study. Precisely, this chapter would elaborate the effects of GST in term of economic perspective through the literatures and articles from the various scholars in this field. Researcher will review the economic effects of GST implementation mainly from Malaysia and other countries experience. The focus of this review will be on the inflationary impacts of GST across different countries.

The key concern among Malaysian due to the introduction of GST is their living cost associates with the after-tax price of goods and services in the economy. Although GST is merely a replacement tax, Malaysian often assumed that any new tax is introduced, the likelihood rising in price of goods and services are about to happen no matter what. The changes in price of goods and services in the market finally could affect the inflation situation of a country.

Inflation occurred when the price of goods and services in the economy is increasing but the value of money does not. There are two differences view regarding the relationship of inflation and tax. Based on Keynesian theory, taxes have a negative relationship with inflation where when aggregate supply is fixed, the increase in taxes would decrease the aggregate demand and hence increases in taxes are deflationary. In contrast, classical approach indicated that aggregate demand that is determined by money supply will

decrease the aggregate supply and as a result inflation occurred (Utgoff and Brechling, 1979).

Based on Tait (1991), the study conducted to examine the impact of VAT in several selected countries. The conclusion made in the study was there is nothing to do with the inflation when VAT is implemented. Based on 29 cases studied, the finding found that, 89% would not affected by inflation when GST is introduced.

2.1 Theoretical Review of Inflation

Inflation is a global phenomenon that caused in a sustained rise of general price level of an economy. Inflation also leading to declination in currency's purchasing power. The country is said to suffer from inflation pressure when the prices of most goods and services continue to rise upward for a long period of time (Romer, 2012). Inflation phenomenon is also happened when the goods or services demanded in an economy exceed the supply offered. The price tends to raise when the supply is less and this affect everyone in the economy. Therefore, it could lead to the alteration of purchasing power of money because each unit of currency could afford fewer goods and services after the price is increased (Walgenbach, Dittrich, and Hanson, 1973).

On top of that, inflation may originate from both sides of an economy, which are the demand-side and the supply-side. In general the demand-side inflation occurred in an economy due to the several factors, such as, a decrease in exchange rate, high demand of fiscal and monetary policies as well as the fast growth in other countries. These factors may cause the aggregate demand to grow at an unsustainable rate that will lead to increase pressure on scarce resources and a positive output gap. During this phenomenon

of demand-side inflation, the producers will tend to raise the price of goods in economy as to achieve the maximum profit margins when there is an excess of demand in an economy. In contrary, the cost-push inflation happened when producers respond to the increase in production cost as to combat and maintain the revenue gains. There are several factors that contributed to this phenomenon to happen such as the rise in component cost included an increase in raw materials cost, an increase in labor cost, expectation of inflation as well as a decrease in exchange rate (Geoff Riley, 2008).

2.1.1 The Demand-Pull Inflation

Demand-pull inflation is one of the common types of inflation. The excess demand inflation arises when the aggregate demand is rising while the aggregate supply becoming less. The less surplus may happened from fully utilized resources or production unable to meet the demand made in the market. There are two principles associates with the demand-pull inflation which are The Monetarist and The Keynesian.

John Maynard Keynes (1883-1946) emphasizes that the major cause on demand pull-inflation is originated from the increase in aggregate demand (Jalil, 2011). It is a situation where the disequilibrium happened between aggregate demand and aggregate supply that cause the price of goods and services to push up (Adeel, 2010). The excessive aggregate demand in the economy also called surplus demand inflation that mainly cause from too much money chasing fewer goods available in the market (Zahoor, Farooq and Sharma, 2010).

According to Keynes's view on inflation in his book namely 'How to Pay for the War' in 1940, he defined the inflationary gap as the expenditure planning in given the excess

of output available at full employment in the economy. If the inflationary gap between the aggregate demand and supply is larger, the more rapid in inflation will be happened (Jalil, 2011).

Besides, the higher demand occurred when the money supply is raised. Based on classical approach namely Classical Theory of Inflation or Quantity Theory of Money proposed by Irving Fisher in 1911 emphasizes that the excessive of demand is mainly due to the rise in the money supply. In other word, inflation occurred in accordance to direct proportion to the increase in money supply in given level of output (Jhinghan, 2008). The modern income theory also implied that the demand-pull inflation is happened when aggregate money of demand is higher in a relation to the fully-employment output level. The traditional public finance theory implied that all taxes including GST is said to be anti-inflationary in their present. This statement is supported if the indirect tax reduced the consumer spending holding the below characteristics:

i) Indirect taxes affected in the term of the higher price of goods and services.

ii) The marginal propensity to consume of a consumer is similar where an amount taken from tax will reduce the consumer spending by the same amount regardless of the tax.

iii) Indirect taxes are regressive in nature

iv) The marginal propensity to consume is decreased as the income rose.

It can be said that the indirect taxes such as GST is said to be not inflationary since they discourage the consumption of a household and induce savings. This also implied that no demand-pull inflation will happen in the present of such taxation (SK Singh, 2008).

2.1.2 The Cost-Push Inflation

Inflation is not only originated from demand side factors alone. Cost-push inflation is also one of the type of inflation might be happened in an economy. It is mainly origin from the supply side of an economy. The factor will be contributed to the increase in price due to the rise in production cost (Adeel, 2010). The upward increase in price as a result from rising in production cost are passed to the end users or consumers by firms in term of higher selling prices of goods and services in the market (Zahoor and et.al, 2010). Cost-push inflation may consider as Market Power Inflation because the arising in cost of doing business are from the supplier which is the supply side that arise from wage-push or profit-push to price (Godly and Wilfred, 2015).

Cost-push inflation commonly is linked with wages since wages is a bigger part of the business cost by the firms. The upward adjustment of wages in order to compensate the increase in living cost is usually done through trade union's bargaining power (Zahoor and et.al, 2010). Strong labor unions often succeed in forcing the wages to rise and consequently the price of goods in the market also will rise (Godly and Wilfred, 2015). Higher wages demanded will enable the household's purchasing power capability as much as they did before the increase in price (Jalil, 2011).

The cost-push inflation also is most likely to occur in the concentrated industries where the few large firms may be able to coordinate with each other in order to determine the

price and wage in the economy. Besides, the cost-push inflation is also caused by the price-wage structure that somehow will lead to the initial cause of the demand-pull inflation. For instance, the increase in household's spending will trigger the over-demand in the economy and hence the price level will rose up in the market. Due to this circumstance, the firms will attempt to expand the production in the labor market due to the excess demand and as a result this situation will tend to increase the wage up. This phenomenon will lead to the complicated situation between the price stability and the employment (SK Singh, 2008).

Malaysian Consumer Price Index (CPI) is lower than expected during the first-month of GST introduction in Malaysian economy landscape. The inflation rate on the year on year basis revealed the rate of 1.8% which was below than the estimation done at 2.2%. The estimation of 2.2% also took the factors such as the opportunity of firms to increase the price of products into account. Nevertheless, the factor has been combated by the Malaysian Customs authority through the Anti-Profiteering policy and law in order to prevent the businesses to raise the price of goods and services additional to GST charged (Kiasutrader, 2015).

2.2 Theoretical Review of Pricing

The changes in any fiscal reformation like taxation reformation could affect prices of goods and services in the economy and consequently it also will affect the inflation status of an economy. Based on the theoretical perspective, there are several factors that might contribute to the changes in the price of goods and services, due to the changes in tax mechanism. As per discussed previously, many countries that has long adopted the

GST as their consumption tax has revised the tax rate after several years of its implementation.

According to International Monetary Fund (2016) in their Country Report on May 2016, the effectiveness of Malaysian GST as a new revenue generator tool could be improved by narrowing the exempted and zero rated items and by increasing the GST rate in order to maximize the fiscal policy objectives. However, based on the Klynveld Peat Marwick Goerdeler or known as KPMG (2016) on their October 2016 report, there is no change to GST rate for Malaysia in 2017 thus; the GST rate will remain at 6% as per initial rate introduced. The statement also has been reported by the Second Finance Minister, Datuk Johari Abdul Ghani in his statement made at National Tax Conference 2016 which is the Malaysian will face no increase in GST percentage in 2017 (Lidiana Rosli,2016). Although the Malaysian government has rest assured that no increase in the GST rate, the mechanism that influenced to the changes in prices of goods in the market has to be evaluated.

In theory, price is defines as the value used as an exchange between goods or services in the economy by the economic agents (Thomas, 2012; Kotler and Armstrong, 2010). For simplicity, price is something we need to pay in order to gain something (goods or services). The price mechanism also involved the interaction between buyer and seller in the economy where it is a situation when a buyer is willing to pay and a seller is willing to accept in the transaction between them.

The pricing theory is an economic theory that defined the price of specific goods or services in the economy that involving the interaction between demand and supply.

Kotler and Armstrong (2010) applied this economic principle in determining the price in the market. The desire is to achieve the balance between demand and supply of the economic agents. Consequently, this concept will allow the price to be adjusted in accordance to market changes. On top of that, there are several factors that could influence the price determination of goods and services in the market. Based on Kotler and Armstrong (2010), those factors can influence the firms to determine the appropriate price point of goods or services as well as contributed to changes in consumer price such as production cost and economic condition as well as compliance cost of businesses.

2.2.1 Production Cost

The cost incurred in production process is one of the important elements in determining the price level in the market. In today's competitive market, the firm's goal is to minimize the production cost and maximize the profit. Therefore, any additional cost incurred could lead to a burden for the firms in price setting (Kumaran, 2017). According to Secapramana (2000), the price of goods or services shall capable in covering the production cost and marketing cost of the supply made in the long term. Cost made by the firms can be divided into two categories namely direct-cost and indirect cost (Ethan, 2018). A direct cost incurred is a price involved directly attributes to the production of specific goods or services such as raw materials cost and labor cost. In contrary, indirect cost is a price incurred beyond the expenses associated in producing the products or services such as office rental, office equipment, cleaning supplies and etc (Surbhi, 2015).

Labor cost such as wage is the major contribution made by the firms in production cost (Tejvan Pettinger, 2016). A higher wage rate could trigger the inflation of an economy because the rising in production cost involved (Christina and David, 1997). This consequently will affect the inflation condition of an economy because firms have the tendency to raising the selling price of goods and services in order to compensate the increase in cost of doing the business. Based on the Bank Negara Malaysia Annual Report (2013), the minimum policy wage regulated has led to the increase in the wage cost and as a result a burden felt by the firms in term of higher cost pressures especially the small and medium businesses where the rely on low-wage workers. As mentioned before, the goal for a business is to maximize its profit. In order to mitigate the rising of production cost, most firms will shift the burden to consumers by increasing the selling price (Bank Negara Malaysia Annual Report, 2013). If the issue is not combat carefully, this situation will eventually will lead to the cost-push inflation to happen.

2.2.2 Compliance Cost

A compliance cost is incurred in most of the businesses in an economy. The cost incurred included the time and money expenses in fulfilling the government requirements in term of legislation and regulations such as GST (VAT) compliance cost. The GST compliance cost occurred when the businesses are required to keep the detailed records of all input tax and output tax to facilitate the completion of GST return to government body (Hasyimi and Ashikin, 2018; Rizal, Rosiati, Fariq, Syuhada,2013).

The compliance cost of GST is obviously a burden to businesses is setting up a new taxation system in order to compile with the new tax regime. This situation also will

create an extra cost on traders and suppliers especially to small and medium (SME) company. A study and survey done by Rizal and et al (2013) found that there is a potential of compliance cost to significantly rising during the first three years of GST implementation. The study reported that the compliance cost will increase for SMEs for GST service for tax computation and tax planning by 70.4% and 9.6% and therefore will lead to an average increase in additional GST service cost to RM6, 336 per year.

The situation stated above is obviously will create an extra burden to businesses especially those in SMEs group of company. In return, the businesses have the tendency to pass the cost burden due to this onto consumers by offering the higher price of goods and services in the economy after GST is implemented.

2.2.3 Economic Condition

Economic condition is one of the other elements that could contribute in price setting by the firms. The slow state of economy will alter the price setting by the firms since it affect the production cost in general (Kotler and Armstrong, 2010). For instance, the depreciation of country's currency or exchange rate will cause the importation price to be higher. A higher the price of imported goods will affect the production cost especially the firms that using the imported raw materials in the production process. Therefore, the firms will tend to increase the selling price to maximize their revenue and this in tum may further fuel the inflation rate in term of cost-push inflation phenomenon (Tejvan, 2017).

2.3 Empirical Evidence of Inflationary GST

There are several experiences of others countries regarding the price effect of GST which are there will be a one-time increases in prices and the increase in price occurred during the early period after GST is implemented in the countries. The different impact on price when GST implemented is vary across countries depending on other factors other than fiscal policy.

Based on the study of price effects in Republic of Croatia discovered by Dalic (1997), it shows that inflation might be occurred during the first year of implementation GST in the country. The analysis using the statistical data of the price for baskets of goods and services measured by using the retail price index with the assumption no cascading before the wholesale stage resulted in the increase in prices could be a maximum of 3.27% and 5.2%. The increase in price is not as higher as the 22% GST rate suggested. This increase in prices occurred during the early year right after GST is implemented, thus, it will not cause continues raise in prices because the changes in prices only happens in one-time event.

According to Tait (as cited in Dalic, 1997), such factors included the level of development in market mechanism, the changes involved in economic policies, the economic cycle during the introduction of GST, income policies and several psychological factors.

Tran-Nam (2000) explained that if the government used the monetary policy such as no increase in money supply in the economy, there will be no inflationary affect in the economy of a country due to the introduction of such tax. This is because any changes in

price, for example, the increase in price level due to GST charged, it will also decreased in the real expenditure. This situation will resulted the production of products decline until the price level return back to its original level, that is, the price will equal to its original price before GST charged takes place.

Moreover, a study by Sarili (2000) in the case of Turkish Economy stated that the inflationary impact of GST applied is different depending on how GST works whether as a replacement tax or as an additional tax to the country. GST could cause no inflation effects both when GST is introduced as to replace current consumption tax and as generating more revenue to the country. If GST is replacing the consumption tax such as turnover tax in Turkey, there only give the impact on relative prices while if the GST is proposed as to generate more revenue, this could cause no inflation issue since when the GST is introduced, the consumption of goods and services will falls. He concluded that, the inflation effect is not come from the introduction of GST itself, however, the inflation occurred when the government increases the expenditure in the country. Theoretically, the reason why inflation did occurred is when the government increases the level of government expenditure and this will also increase the aggregate demand in the economy, hence, the aggregate demand is higher than aggregate supply, this will lead the price to increase and lastly will resulted inflation in the economy.

Tait (as cited in Sarili, 2000 and Carroll et., 2010), in his studies on the impact of GST on CPI, examined the movement in CPI, credit and wages to illustrate the effects of price before and after the introduction of GST by using four hypotheses namely little or no price impact, one-time price impact, acceleration impact, shift and shift plus acceleration impacts.

His results show that between 35 countries that were selected to investigate the GST effect on price, there are only six countries having some acceleration in the rate of inflation. Meanwhile, the others 29 countries are having no inflation impact or a one-time increase in CPI.

Le (2003) said that GST as a broad-based consumption tax will influence public to consider it as the cause of inflation. This is because the producer eventually will raise the price of goods and services with the amount of the tax charged and this action will lead to the continuous increase in price level, thus, inflation will occur in the economy. As to reduce the pressure of inflation that might be occurred during the implementation of GST, the government should take the action to control the monetary policy. Hence, such policy will lessen the inflationary effects. Le also concluded that the introduction of GST would not necessarily lead to inflation, however, if it does, there will be only a one off increase in the price level, thus, inflation, during the early year of GST adoption. He indicated that the government should analyze the good timing when the right time GST will be implemented in the country. He stressed out that the introduction of GST surely not suitable during higher inflation in the economy.

Valadkhani and Layton (2004) examined the quantifying analysis regarding the effects ofGST in Australia's Capital Cities by using an econometric approach. The data of CPI was collected quarterly from fourth quarter in the year 1948 until first quarter 2003.The study had found that there is no significant impact on magnitude and duration of GST that effects the inflation. The inflation only occurred during the first year of its implementation in Australia as a whole. During this first year of GST implementation, there is an increase of 2.8% in inflation in the country. Hence, the inflationary affects

only occurred during the first term implementation of GST. This result valid by analyze it using the quarter-to-quarter data

A number of key economic impacts have been debated by Malaysian regarding the adoption of GST in Malaysian economy landscape. One of the macroeconomic concerns is the effects of GST on Malaysia inflation. Some expected that the inflation rate due to GST will give a minimal impact to the overall inflation rate in Malaysia. Based on Irvin (2014), the impact of the GST adoption is estimated at 1.5% point. Malaysia's Ministry of Finance also estimated that the GST implementation shall add at least one percentage point to inflation in 2015 which resulting the annual percentage of inflation to be increased between 2% to 3% (Chan, 2013).

On the other hand, the study done by Zahidi (2014) estimated the inflation rate during year of GST introduction will be between 4% to 4.5% after taking considerations a few factors such as the subsidy rationalization, the price trend of oil market and the number of zero-rated items in GST listing. On top of that, Lim and Ooi (2013) implied that the inflation is estimated to hit at additional 3.86% after GST implementation due to the reaction from both agent in economy, firms and consumers. The study also conclude that the estimation of inflation rate in Malaysia based on consumer price index is difficult to calculate accurately because the behavior reactions from business and consumers.

According to Suhaimi, Zamros, Ramesh and William (2015), there is mixed impact occurred in term of price of goods and services in the economy. The mixed impacts is largely because the GST reformation is a tax that merely a replacement consumption tax from SST that has standard-rated, zero-rated and exempt-rated types that implied that the

rising in price is found to be a mixed results. There is an increase and a decrease in price trend after GST implementation such as a decrease in price found in car prices up to 1.5%, an increase price found in processed foods and beverages approximately more than 6%, and the price also remained unchanged for basic items such as bread, eggs and cooking oil. Subsequently, there is also a price increase found in exempt-rate GST category such as taxi fares.

Meanwhile, although the GST rate in Malaysia amongst the lowest, the tendency for an inflation to hit after the GST implementation is huge since GST is occurred to the prices of goods and services in every stage which could result in inflation because the general price might increase and a higher inflation might be occurred from the continuously of inflation. The continuous increase of the price would cause the demand to subsequently decrease due the decrease in purchasing power by the households. Nevertheless, based on the study done by the Ministry of Finance in analyzing the price impact, it is expected that the consumer price index will decrease by 0.1% due to the price falling in clothing, footwear and communications (Lau,Jarren and Jordan, 2013).

The changes in VAT rate or any tax reformation will change the price trend in the economy. For instance, with the increasing in VAT rate, the businesses will transfer the changes in tax rate in term of increasing the price in the economy. This therefore will lead to the increase in consumer price index for one year that is technically known as first round effect (Felcser, 2013). Kirkby (2013) and Felcser (2013) implied that there is a second round effect on inflation due to changes in VAT rate that is known as price-wage inflation spiral. This situation occurred when the workers demanded a higher pay in order to offset the potential additional price hikes of goods and services in the

economy. For example, the initial increase in price will urge the workers to demand a high wage in order to offset the increase in their living cost. Due to the initial inflation situation, the second round effect will cause the inflation ripples to happen in the economy (Gordon, 2010).

Suan (2015) concluded that there is a short run impact of GST adoption on CPI in other countries experiences. The short term inflationary impact due to GST is measure by at least 3 months before and after GST is introduced. In Singapore, the GST was introduced in 1994 with initial rate at 3% showing the increase in CPI from 2.6% before GST to 3.1% after GST. Same goes to Japan, the CPI index show an upward trend from 1.1% before GST to 2.7% after GST in 1989 with 3% GST rate. On Australia case, the CPI index increased from 3.1% before GST to 6.1% after GST during 2000 at 10% GST rate. In contrary, Thailand reported a decrease in CPI index from 4.9% before GST to 4.6% after GST in 1992 despite a high GST rate at 10%. This happened due to the enforcement from Thailand's government for state-owned businesses to absorb the GST impact.

Suan (2015) also reported that there is no long term effects due to GST revealed from other's countries experiences. The inflation rate has been return back to the average inflation rate after the years of GST implementation. However, for Japan and Thailand, the inflation rate is higher than the long term average rate after GST implementation that mainly due to the economic crisis in Asian financial crisis during year 1997 and 1998. It is estimated that the headline inflation for Malaysia is expected to be moderate for the next several years. The inflationary impact is expected to be in short term phase and the

central bank is expected to not react aggressively over monetary policy in order to offset the GST impacts.

On top of that, any changes in tax policy such as an increase in GST rate will eventually affect businesses and consumers in the economy. Business operators will tend to transfer the increase in their production cost due to GST increase into consumer prices. This happened when businesses raising the price of goods and services in the economy, and this are then will yield the result of inflation in a country (Jonneke Dijkstra, 2013). The study of price setting behavior in Netherland found that the VAT increase from 17.5% to 19% which is the increase in 1.5% VAT rate has almost completely shifted to consumer prices (Jonker, Folkertsma and Blijenberg, 2004).

The study of Gautier and Lalliard (2014), Carare and Danninger (2009) and Viren (2009) implied that more than half VAT rate changes are shifted to consumer prices during the first quarter of VAT rate increases. The situation occurred in response by businesses in altering their behavior towards the tax rate changes.

Based on Chen and Syukry (2017), businesses are being challenged in term of compliance cost of GST, as it is a new tax regime that requires an appropriate tax system to keep track business' accounting records, therefore, this eventually will raise the cost of doing business because business operators need to allocate the additional expenditure on system upgrading and hence, the selling price is tend to go up due to this factor. However, the Royal Malaysian Customs Department claims that there will be a reduction on business cost due to these following factors such as GST paid on input in the production chain is claimable, exports are zero rated, and there is no matching of

input tax and output tax. Nonetheless, other countries experienced also claimed that businesses will not hurt due to this tax regime. GST as a multistage tax is collected in every layer of production process thus there is differences between the input tax and output tax. The output tax is a tax where businesses shall impose on goods or services that subjected to GST while the input tax is a tax that will be charged by businesses on acquisition of goods or services. This situation indicated that the GST is not a burden to business because the expenses occurred in production process is claimable as input tax credit (Hooper and Smith, 1997).

CHAPTER3

RESEARCH METHODOLOGY

3.0 Introduction

This chapter discusses the methodology that was used to investigate the research topic. The purpose of this chapter is to provide an overview of the research design implemented by the researcher to test the research framework of the recently introduced GST in Malaysia. The research design that included is the research process adopted in the study, data collection and data analysis methods employed by the researcher are briefly described.

3.1 Research Framework

3.1.1 Theoretical Framework

The framework of the research is developed based on the fundamental research variables that reflected the research topic.

In measuring the link between inflation as proxy by Consumer Price Index (CPI) and Goods and Services Tax (GST), the researcher developed the following model:

$$\textbf{Inflation} = \textbf{f(GST, UNR, MS, IMP)}\text{------ (1)}$$

where

GST = Goods and Services Tax

UNR = Unemployment Rate

MS = Money Supply

IMP = Total Import

The functional relationship of inflation is depicted from equation (1) included the macroeconomic variables that might be positively causes the inflation in Malaysian economy. The macroeconomic variables used also consist of monetary and fiscal factors.

Equation (1) also illustrates the relationship between two variables knows as dependent variable and independent variables. Inflation rate will be measured by using the Consumer Price Index (CPI).

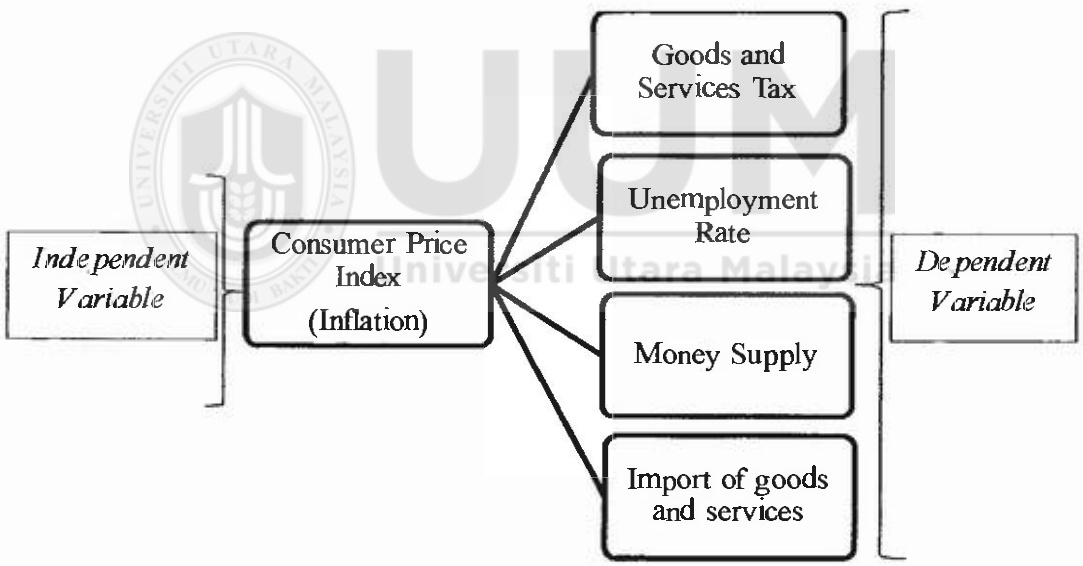

Figure 3.1
Theoretical Framework

Figure 3.1 depicts the relationship between the dependent variable and independent variables. CPI as dependent variable is used to calculate the inflation rate in Malaysia. CPI is one of the techniques used to evaluate the inflation rate in an economy besides the Gross Domestic Product Deflator. Meanwhile, the independent variables consist of four macroeconomic variables namely Goods and Services Tax, Unemployment Rate, Money Supply and Import.

3.1.2 Conceptual Framework

The definition of terminology used in the research framework in analyzing the relationship between independent and dependent variable is briefly described as per below:

i) Consumer Price Index

Generally, inflation can be defined as a continuous increase in the aggregate or general price level in an economy. Inflation can cause an increase in the cost of living. In other word, inflation is where the money could not buy the goods and services as the money could before the increase in general price level. The value of money has been dropped during inflation crisis.

A consistent increase in the aggregate price level in the market will lead to the rise of the living cost of a country. The impact of inflation will cause the negative and positive vibes in an economy. The stable inflation rate between 2% or 3% will ensure the stability of economic growth (Maryam Jameelah Hashim, Idris Osman and Nura Lina Elias, 2014).

Inflation as reflected by the consumer price index is the total cost change in the basket of goods and services where the changes might be fixed or changed at specific intervals such as yearly. CPI is a measuring the change in price of goods and services in consumer perspective. It is also a key of monitoring the purchasing trends and inflation in an economy.

ii) Goods and Services Tax

GST is an example of modern tax under the consumption tax category. GST is the form of indirect tax whereby the taxpayers will pay the GST levied in accordance to their spending and consumption on goods and services. GST will affect the entire individual from businesses to consumers in the economy. It will cover through all the production chain of goods and products produced by the firms. GST levied will be started from the raw materials up to finished goods in the production of products. GST is also known as multi-stage tax since the tax is charged at every layer of production chain.

GST also was adopted in various countries worldwide including developed and developing countries as it has an easy administrative working and it is hardly to avoid by the taxpayers in paying the tax imposed (Fetus et al, 2016). Based on the definition of GST described by Joseph and Samuel (2014), GST has several key features as per below:

a) GST is a consumption tax

b) GST is a multistage tax

c) The value added tax is important in GST as it determine the computation value of GST

ii) Unemployment Rate

In general, unemployment rate is defined as the ratio of jobless person against the total number in the labor force. The labor force consists of the employed and unemployed people who are jobless but actively seeking for the job. People who are actively looking for a job, children and the retired are not considered as labor force.

The unemployment rate often increased during recession and decreased during economic recovers. The government of a country will try to sustain the unemployment rate at 4% or less in order for the stabilize economy of a country (Jeffrey Parker, 2010).

iii) Money Supply

Money supply is depicted as the total amount of money or currency and other liquid instruments circulating in an economy. The instruments represents the broad money that consist currency outside banks, foreign currency deposits of residents sectors other than central government, bank and traveler's checks as well as other securities such as certificates of deposits and commercial papers (Peter Howells, 2010). The broader monetary aggregate also known as broad money in Malaysia is M3 that is widely used in measuring the amount of money circulating in Malaysian economy (Fintan Ng, 2016).

iv) Import

An import of goods and services is involved in the international trade. It is a goods or services that bought from one country to another where the goods and services are made

outside of the country. In other words, the goods or services that produced in a foreign country and sold to domestic consumers.

3.2 Research Model

3.2.1 Data Analysis

The research data is collected and gathered through secondary sources in measuring the empirical analysis with regard to the scope of the research. The time series data is employed in this analysis is span over the monthly period from year 2015 to 2018. The fundamental research data sourced from Bank Negara Malaysia (BNM), Ministry of Finance of Malaysia and Trading Economics. The employed data is then examined by using statistical software Eviews 9.

The secondary data in monthly form collected are consumer price index, goods and services tax, unemployment rate, money supply (M3) and total imports. The secondary data can be classified as the analysis of existing figures collected by others that can simply retrieved from related sites. The major advantage of secondary data is it is economical where the researcher does not have to invest a lot in finding the desired data that certainly will be costly. In addition, it is also a reliable data where the sourced data was collected by the expertise from the specific scope of their research agenda.

Table 3.1 indicated the description of the data used in the analysis and it's sourced. The main sources of tested variables are obtained from Central Bank of Malaysia (BNM) in its economic and financial data files.

Table 3.1
The description of variables

No	Variable	Unit	Sources
1	Consumer Price Index (CPI)	(2010 = 100)	Economic And Financial Data For Malaysia, Bank Negara Malaysia, Trading Economics
2	Goods and Services Tax (GST)	RM million	Federal Government Revenues files, Ministry of Finance, Accountant Department, Bank Negara Malaysia
3	Unemployment Rate (UNR)	% of labour force	Economic And Financial Data For Malaysia, Bank Negara Malaysia, Trading Economics
4	Money Supply, M3 (MS)	RM million	Economic And Financial Data For Malaysia, Bank Negara Malaysia, Trading Economics
5	Total Imports (IMP)	RM million	Economic And Financial Data For Malaysia, Bank Negara Malaysia, Trading Economics

The tested variables data of the analysis is collected from January 2015 to December 2017 for consumer price index, unemployment rate, money supply (M3) and total imports. On the other hand, data for GST is collected in yearly form from year 2015 to 2018 and this is then will be converted via frequency conversion in Eviews to monthly form. The GST data for year 2018 is the forecasting data made by the Malaysia Ministry of Finance in their respective financial report. In order to achieve the goals of the research, all the data for 2018 except for GST is gathered from forecasting data done by Trading Economics, the website that provides the economics data across the globe and also an entity that has experience in performing global economics research. The yearly

data is then will be converted to monthly form via frequency conversion done by Eviews.

3.2.2 Quantitative Analysis

In constructing the appropriate model on the impact of Malaysian GST on the price level (inflation), the researcher adopted the model developed by Fatukasi (2015) in the research of "Determinants of Inflation in Nigeria: An Empirical Analysis" where the combination of structurlist, monetarist and fiscalist are included in the model.

The model is specified as follows:

$$\mathbf{CPI_t = \beta_0 + \beta_1 GST_t + \beta_2 UNR_t + \beta_3 MS_t + \beta_4 IMP_t + \varepsilon_t}$$

where,

CPI_t = Consumer Price Index at period t

GST_t = Goods and Services Tax at period t

UNR_t =Unemployment Rate at period t

MS_t= Money Supply at period t

IMP_t = Total Import at period t

ε_t = Error term

For the purpose of the study, the model is converted to natural log form and the remodel is as follows:

$$\mathbf{LNCPI_t = \beta_0 + \beta_1 LNGST_t + \beta_2 LNUNR_t + \beta_3 LNMS_t + \beta_4 LNIMP_t + \varepsilon_t}$$

where LN is termed as natural logarithm, the error term donated as ε t, t is refer as time parameter and the elasticity of the variables is denoted as β_1, β_2, β_3, β_4 respectively.

In further estimating the objective of the research which is to determine whether there is any evidence shown the causality between Malaysian Inflation and Goods and Services Tax in Malaysia in short and long run relationship, the researcher adopted the Autoregressive Distributive Lagged (ARDL) approach or also known as "Bound Test" which was proposed by Pesaran and Shin back in 1999 to disclose the relationship among the tested variables of the analysis. ARDL technique is a modern cointegration tool in econometric analysis. ARDL technique has several credits as compared to other cointegration testing. ARDL approach allows the estimation of the variables that have order of integration I(0), I(1) or the combination of both. For instant, it allows a mixture of I(0) and I(1) variables in a model which avoids the need of pre-testing of a unit root test. The ARDL model enables the analysis of the appropriate data that can extract the result of long run and short run relationship simultaneously (Pesaran, Shin and Smith, 2001).

Particularly, the ARDL cointegration procedure can be implemented in analyzing whether the long run relationships are exist when the group of the time series variables are stationary whilst others are not stationary. The equation (1) below implied the basic form of ARDL model:

$$y_t = \beta_0 + \beta_1 y_{t-1} + \ldots + \beta_k y_{t-p} + \alpha_0 x_t + \alpha_{01} x_{t-1} + \alpha_2 x_{t-2} + \ldots + q x_{t-q} + \varepsilon_t \quad (1)$$

where ε_t is a random disturbance term which it is serially independent.

The ARDL procedure as a conventional cointegration approach enables the econometric analysis of that give the advantages as per below;

i) The tested variables are assumed to be endogenous.

ii) The approach can be tested if the mixture of I(0) and I(1) existed in the tested data.

iii) The short run and long run coefficients of the variables are estimated simultaneously.

Before running the ARDL estimation, several preconditions need to be checked in order for the ARDL technique to be valid. Below are basic steps involved in ARDL technique:

i) The data must be integrated of order I(d) where $d < 2$ (none of the variables are integrated of order I(2)

ii) Develop an unrestricted error-correction model (UECM)

iii) Determine the appropriate lag structure of the model in step (i)

iv) Ensure the model is serially independent

v) Ensure the model is dynamically stable

vi) Run the Bound Test whether the long run relationship among variables are existed

vii) If the result in step (v) is positive, estimate the long run model and UECM

viii) Use the data in step (vi) to examine the short run dynamic effects and the long run equilibrating relationship of the variables in the model

Precisely, the ARDL approach will be tested as per below:

Step 1: Testing Order ofIntegration

The analysis will be begin in examining the order of integration where we need to ensure that no data under the analysis is integrated of order I(2) or higher. The analysis can be tested by using the unit root test such as Augmented Dickey Fuller (ADF) test by checking that none of the data is I(d) > 2.

Below are the hypotheses involved in testing stationarity using the ADF approach

The null hypothesis: Unit root existed

The alternate hypothesis: Unit root not existed (stationary)

Below are the basic regression models of ADF

i) No constant with no trend: $\Delta y_t = \gamma y_{t-1} + v_t$

ii) Constant with no trend: $\Delta y_t = \alpha + \gamma y_{t-1} + v_t$

ii) Constant with trend: $\Delta y_t = \alpha + \gamma y_{t-1} + \lambda_t + v_t$

The ADF added the lagged differences to the below models

i) No constant with no trend: $\Delta y_t = \gamma y_{t-1} + \sum_{s=1}^{m} \alpha_s \Delta y_{t-s} + v_t$

ii) Constant with no trend: $\Delta y_t = \alpha + \gamma y_{t-1} + \sum_{s=1}^{m} \alpha_s \Delta y_{t-s} + v_t$

iii) Constant with trend: $\Delta y_t = \alpha + \gamma y_{t-1} + v_t + \sum_{s=1}^{m} \alpha_s \Delta y_{t-s} + v_t$

In order to run the ADF test, the lag lengths need to be choosing in order to ensure that the tested data is not serially correlated.

Step 2: Develop the UECM Model

From equation (1) below, the model have lags of dependent variables and lags of other variables as the regressor. For simplicity, assume that there are three variables in the model where the dependent variable denoted as y, whilst the independent variables donated as X_1 and X_2 or in other term, there will be (k + 1) variables and – a dependent variable and k other variables.

$$y_t = \beta_0 + \beta_1 y_{t-1} + \ldots + \beta_k y_{t-p} + \alpha_0 x_t + \alpha_{01} x_{t-1} + \alpha_2 x_{t-2} + \ldots + q x_{t-q} + \varepsilon_t \quad (1)$$

Considering the below conventional ECM in the cointegrated data in equation (2), where z donated as the error-correction term where the OLS residuals series from the long run cointegration regression,

$$\Delta y_t = \beta_0 + \sum \beta_i \Delta y_{t-i} + \sum \gamma_j \Delta x_{1t-j} + \sum \delta_k \Delta x_{2t-k} + \varphi z_{t-1} + e_t \quad (2)$$

The ranges of summation of equation (2) are from 1 top, 0 to q1 and 0to q2.

$$y_t = \alpha_0 + \alpha_1 x_{1t} + \alpha_2 x_{2t} + v_t \quad (3)$$

$$\Delta y_t = \beta_0 + \sum \beta_i \Delta y_{t-i} + \sum \gamma_j \Delta x_{1t-j} + \sum \delta_k \Delta x_{2t-k} + \theta_0 y_{t-1} + \theta_1 x_{1t-1} + \theta_2 x_{2t-1} + e_t \quad (4)$$

Equation 4 is defined as the Unrestricted Error Correction Model, UECM. From equation (2), we replace the Z_{t-1} with Y_{t-1}, $X_{1_{t\_1}}$ and $X_{2_{t\_1}}$, $X_{1_{t-1}}$ and $X_{2_{t\_1}}$. From equation (3), we can see that the lagged residuals series donated as $Z_{t-1} = (a - a_1 X_{1t-1} - a_2 X_{2_{t-1}})$, where a's represent the OLS estimates of a's. The model in equation (4) has the same lagged levels but no restricted coefficients in the model formed.

Step 3: Determine the Lag Length

The value of optimum lag of p, q1 and q2 need to be selected in order to run the ARDL test. It is necessary to select to optimal lag length of the underlying equation of the long run model. The optimal lag length (k) can be selected by using a proper model selection such as The Akaike Information Criterion (AIC), Schwarz Bayesian Criterion (SBC) or Hannan-Quinn Criterion (HQC). These criterions are tested in accordance to a high log-likelihood value where there is a penalty is given for additional lagged. The form of penalty is varies for each criterion. The values of each criterion are donated as per below:

$$AICp = -n/2(1+\log 2\pi) - n/2 \log \hat{\sigma}^2 - P$$

$$SBCp = \log(\hat{\sigma}^2) + (\log n/n)P$$

$$HQC = \log \hat{\sigma} + (2\log\log n/n)P$$

Where δ2 is Maximum Likelihood(ML) estimator of the variance of the regression disturbances, ˆΣp is the estimated sum of squared residuals, and n is the number of estimated parameters, $p=0,1,2\ldots\ldots P$, where P is the optimum order of the model selected.

The smaller the value of the information criterion the better the result will be achieved.

Step 4: Test The Model is Serially Independent

$$\Delta y_t = \beta_0 + \sum \beta_i \Delta_1 y_{t-i} + \sum \gamma_j \Delta_1 x_{1t-j} + \sum \delta_k \Delta x_{2t-k} + \theta_0 y_{t-1} + \theta_1 x_{1t-1} + \theta_2 x_{2t-1} + e_t \quad (4)$$

The assumption of ARDL approach stated that the errors in equation (4) need to be serially independent.

The LM test need to be run in order for testing the null hypothesis where the error are serially independent against the altemate hypothesis is not serially independent where AR(m) orMA(m), form= 1,2,3....,etc.

Step 5:Test the Model is dynamically stable

Once we developed the autoregressive model, we need to ensure that the model is dynamically stable. In order to achieve this goal, all of the inverse roots of the characteristics equation associated with the model need to be checked whether the model is strictly inside the unit circle.

Step 6: Run the Bound Test

The bound test is run based on the below equation (4)

$$\Delta y_t = \beta_0 + \sum \beta_i \Delta y_{t-i} + \sum \gamma_j \Delta x_{1t-j} + \sum \delta_k \Delta x_{2t-k} + \theta_0 y_{t-1} + \theta_1 x_{1t-1} + \theta_2 x_{2t-1} + e_t \quad (4)$$

In order to estimate the model based on Bound Test, we might perform the F-test as per below hypotheses

Null Hypothesis: $H_0 = \theta_0 = \theta_1 = \theta_2$

Alternate Hypothesis: $H_1 \neq \theta_0 \neq \theta_1 \neq \theta_2$

The test is done in order to analyze the absence of the long run equilibrium relationship of the model associates with zero coefficients of y_{t-1}, x_{1t-1} and x_{2t-1} from equation (4). The long run relationship exists when we're able to reject H_0 in the analysis.

The bound test is computed through Bound F-statistic analysis in order to establish the long run relationship between the variables.

Step 7: Estimate the Long Run Model of UECM

By assuming that the bound test yields a conclusion of cointegration, we can further estimate the long run relationship among the variables of the model:

$$y_t = \alpha_0 + \alpha_1 x_{1t} + \alpha_2 x_{2t} + v_t \quad (5)$$

Meanwhile, the equation (6) below is in term of UECM:

$$\Delta y_t = \beta_0 + \sum \beta_i \Delta y_{t-i} + \sum \gamma_j \Delta x_{1t-j} + \sum \delta_k \Delta x_{2t-k} + \varphi z_{t-1} + e_t \quad (6)$$

where $z_t = (y_{t-1} - a_0 - a_{1X_{1t-1}} - a_{2X2t-1})$ and the a's in the model represents the OLS estimators of the a's in equation (5).

Step 8: Test the short run dynamic effects and the long run relationship of the variables

The long run effect can be extract from equation (4)

$$\Delta y_t = \beta_0 + \sum \beta_i \Delta y_{t-i} + \sum \gamma_j \Delta x_{1t-j} + \sum \delta_k \Delta x_{2t-k} + \theta_0 y_{t-1} + \theta_1 x_{1t-1} + \theta_2 x_{2t-1} + e_t \quad (4)$$

where, long run equilibrium is represent by $\Delta y_t = 0, \Delta x_{1t} = \Delta x_{2t} = 0$, and the long run equilibrium of variables x_1 and x_2 is reflected by $-(\theta_0 / \theta_1)$ and $-(\theta_0 / \theta_2)$ respectively.

The ARDL equation is formed as follows:

$$\Delta LCPI_t = \alpha_0 + \sum_{i=1}^{p} \alpha_{1i} \Delta LGST_{t=i} + \sum_{i=0}^{q} \alpha_{2i} \Delta LUNR_{t=i} + \sum_{i=0}^{r} \alpha_{3i} \Delta MS_{t=i} + \sum_{i=0}^{s} \alpha_{4i} IMP + \delta_1 LGST_{t=1} + \delta_2 LUNR_{t=1} + \delta_3 LMS_{t=1} + \delta_4 LIMP_{t=1} + \varepsilon_t$$

where Δ is operator difference, p, q, r, s represents the lag length of the regression variables and ε_t is an error term that carried a white noise assumption. The parameters $\alpha_{m=i}$ for $m = 1,2,3,4$ represents the short term dynamics of the regression model whereas δ_s represent the long run relationship of the fundamental research variables.

The parameter of the research estimation or a priori expectations of the model shall be picture as per below in term of null and alternate hypotheses.

The null hypothesis which is illustrated the non-existing of a short run relationship among tested variables thus, no cointegration existed are as follows:

$$\mathbf{H_0}: \boldsymbol{\delta_1 = \delta_2 = \delta_3 = \delta_4 = 0}$$

whereas, the alternate hypothesis are as follows:

$$\mathbf{H_1}: \boldsymbol{\delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq 0}$$

which explained the existing of the long run relationship of the tested variables and therefore the cointegration existed.

The above mentioned hypotheses shall be tested by using bound testing technique via F-test procedure in econometric. The test is done to investigate the presence of the long run relationships among tested variables *LGST*, *LUNR*, *LMS*, and *LIMP*.

The F-test procedure is normalized on LCPI is denoted as per below:

$$\boldsymbol{F_{LCPI}(LCPI \mid LGST, LUNR, LMS, LIMP)}$$

The ARDL bound testing procedure using F-test is assumed to be an asymptotic non-standard distribution under the null hypothesis where no cointegration among the

variables. The decision rule is made based on the two critical values which are lower critical bound and upper critical bound. These critical values also depend according to the number of explanatory variables in the model whether the variables are integrated of order zero or one as well as the model contains an intercept or trend or both (Pesaran et al, 2001). The derivation of two asymptotic critical values of the test is as per below:

i) The lower critical value

- All the variables are integrated of order zero, I(0)
- No cointegration relationship among the tested variables

ii) The upper critical value

- All the variables are integrated of order one, I(1)
- Cointegration relationship exists among the tested variables

The decision rule for F-test approach is decided as per below:

i) The value of computed F-statistic is greater than the upper bound critical value

- The null hypothesis (H_0) of no cointegration will be rejected

ii) The value of computed F-statistic is smaller than the lower bound critical value

- The null hypothesis (H_0) of no cointegration cannot be rejected

iii) The value of computed F-statistic is between two critical values

- The decision can be made if the order of integration in the explanatory variables is known

By assuming that the cointegration is established among the tested variables that reflected from the F-test procedure, the unrestricted error correction model (UECM) is developed as per below:

$$\Delta LCPI_t = \alpha + \sum_{i=1}^{p} \alpha_{1i} \Delta LGST_{t=i} + \sum_{i=0}^{q} \alpha_{2i} \Delta LUNR_{t=i} + \sum_{i=0}^{r} \alpha_{3i} \Delta LMS_{t=i}$$

$$+ \sum_{i=0}^{s} \alpha_{4i} \Delta LIMP_{t=i} + \lambda EC_{t-1} + \varepsilon_t$$

where λ is represents the speed of adjustment parameter and EC is the residuals obtain from initial ARDL cointegration model. The UECM model is obtained to finding the speed of adjustment towards the equilibrium.

The diagnostic checking procedures also implemented in the analysis in order to achieve the classical liner regression model assumptions. The tests involved are serial correlation, heteroscedasticity, and normality testing. In addition, the cumulative sum (CUSUM) and cumulative sum of square (CUSUMSQ) procedures are also used in order for testing the stability of the variables in long and short run. The rule is obtained if the plots of CUSUM and CUSUMSQ are lying in between the critical bound value of 5%, the null hypothesis (H_0) cannot be rejected where the results showed that the variables of the model are structurally stable.

CHAPTER4

RESEARCH FINDINGS AND DISCUSSION

4.0 Introduction

This chapter presents an empirical evidence of the objective of the research. The section included the econometric analysis findings derived from the utilized data using the statistical method of a time series examination. The discussion of the finding results through stationary test, unit root test, stability and bound test are briefly explained empirically. The main focus of the chapter is to provide numerical support in analyzing the inflation and goods and services tax in Malaysia. The empirical result is crucial in achieving the goals of the research. The obtained findings are herein discussed.

4.1 Stationary Test

In order to investigate the properties of time series variables, the stationary test were performed in analyzing the existing of the unit root of the tested data. The presence of the unit root in the variables implied that the data is not stationary where the variance, covariance and mean are not stationary. The existing of unit root will yield the result of spurious estimation. The utilization of Augmented Dickey Fuller (ADF) test is taken based on the null hypothesis that the data has a unit root. The unit root test involved the natural logarithm of the tested variables namely consumer price index (CPI), goods and services tax (GST), unemployment rate (UNR), money supply (MS) and import (IMP).

4.1.1 Augmented Dickey Fuller Unit Root Test

Table 4.1
Unit Root Analysis

Variables	At Level		Variables	At first difference	
	ADF Test			ADF Test	
	t-statistic			t-statistic	
	Intercept	Intercept and Trend		Intercept	Intercept and Trend
CPI_t	-0.4516	-2.6889	ΔCPI_t	-6.5995***	-6.5382***
GST_t	-3.1279**	-21.9366***	ΔGST_t	-5.0184***	-3.6983**
UNR_t	-2.1721	-2.6019	ΔUNR_t	-7.9438***	-7.9996***
MS_t	0.3047	-1.0030	ΔMS_t	-6.6060***	-6.9140***
IMP_t	-1.8749	-1.9403	ΔIMP_t	-9.9026***	-10.2522***

Notes: *,**and*** indicates significant at the 10%, 5% and 1% levels respectively

The unit root test was conducted via ADF test that consists of intercept analysis as well as intercept and trend analysis. If the tested variables are stationary at level, the variables will have the temporary impacts on macro economy landscape and vice versa. The findings of variables integrating are reported in Table 4.1. The results shown that there is one variable stationary at level namely goods and services tax at 5% significant level for intercept and 1% significant level for intercept and trend and other than that, the series is non-stationary at level but stationary at first difference. For instance, consumer price index, unemployment rate, money supply and import are exhibit I (1) properties. Hence, the result depicts that all variables are statistically significant and no unit root existed at first difference. ARDL is then can be used in examining the cointegration of the model since none of the series are integrated of order 2, I(2).

4.2 Autoregressive Distributed Lagged (ARDL) Analysis

The Autoregressive Distributed Lag (ARDL) model and Error Correction model (ECM) will be employed to investigate the inflation and GST in Malaysia. In order to proceed with the proposed test technique, the appropriate lag length need to be determined. The lag selection criterion is widely used as a guide in selecting the appropriate model. We will use the autoregressive lag length test based on Akaike Information Criterion (AIC) with the maximum lag order is set at 4 for dependent variable and 2 for independent variables. The test is based on the log likelihood function. The ideal lag selection is the minimization of the AIC value where this implied that the model is nearly to be true model.

Table 4.2
Lag Length Criterion

Variables	Coefficient	Std Error	t-statistic	Prob. Value
CPI(-1)	0.525149	0.055768	9.416661	0.0000
GST(-2)	0.489915	0.082895	5.910078	0.0000
UNR(-2)	-0.028404	0.018995	-1.495309	0.1438
MS(0)	0.019810	0.002915	6.794972	0.0000
IMP(-1)	0.014871	0.004666	3.187073	0.0030
C	2.408159	2.408159	6.687876	0.0000

Adjusted R-squared = 0.995211
Durbin-Watson stat= 0.995211
F-statistic = 936.1674
Prob(F-statistic) = 0.000000

According to the results reported at Table 4.2, it noted that ARDL (1, 2, 2, 0, 1) is the optimal model based on AIC selection for consumer price index, goods and services tax, unemployment rate, money supply and import respectively.

4.2.1 Bound Test Analysis

The bound test of this study is based on F-statistic and follows a non-standard distribution. Under this, the null hypothesis indicates that there is no cointegration among the variables. Considering the calculated F-statistics is greater than the appropriate upper bound critical values then the null hypothesis is rejected, implying the existence of cointegration. If, however the statistic is below the lower bound, the null hypothesis cannot be rejected, indicating the lack evidence existence of cointegration. When the calculated F-statistics lies within the lower and upper bounds, the result, however, is inconclusive.

Table 4.3
ARDL Bound Test Analysis

Estimated Model		$CPI_t = f(GST_t, UNR_t, MS_t, IMP_t)$
Optimal Lags		(1, 2, 2, 0, 1)
F-statistic		4.902011**
Significance Level	Critical Bounds for F-statistics	
	Lower Critical Bound	Upper Critical Bound
10%	2.45	3.52
5%	2.86	4.01
1%	3.74	5.06

R-squared = 0.569608
Adjusted R-squared = 0.446639
F-statistic = 4.632131
Notes: *,**and*** indicates significant at the 10%, 5% and 1% levels respectively

After the optimal lag length criterion has been estimated, the next step in to investigate a long run and stable relationship among the tested variables via Bound Test that was developed by Pesaran et al. (2001). The procedure is useful in examining the existing long run relationship among variables within a multivariate framework. The estimation result is reported as per Table 4.3. It shown that the computed F-statistic value [4.902011>4.010000] is greater than upper critical bound at 5% significance level. The results revealed that cointegration existed among consumer price index (inflation), goods and services tax, unemployment rate, money supply and import for this case.

4.2.2 Long Run Relationship Analysis

Since the establishing model is stable, we may precede the investigation of the variables by analyzing the impact of goods and services tax, unemployment rate, money supply and import on Malaysia inflation during long term. The result is generated in Table 4.5. From the results, we can conclude that all the exogenous variables have a significant relationship towards the impact on Malaysian inflation in the long term.

Table4.4
ARDL Estimated Long Run Coefficient

Dependent Variable: CPI_t				
Variable	Coefficient	Std. Error	t-Statistic	Prob. Value
GST_t	0.107664***	0.029481	3.651988	0.0008
UNR_t	-0.213730***	0.064251	-3.326502	0.0021
MS_t	0.041718***	0.004321	9.653610	0.0000
IMP_t	0.070700***	0.015170	4.660534	0.0000
C	5.071401***	0.605265	8.378816	0.0000

Notes: *,** and *** indicates significant at the 10%, 5% and 1% levels respectively

From Table 4.4, the result implied that GST has a significant long run impacts on inflation in Malaysia. Every 1% increase in GST induces to 0.11% increase in inflation. On the other hand, unemployment rate reveals the negative relationship against inflation in Malaysia. The negative coefficient on unemployment rate implied a positive impact on inflation where a 1% increase on unemployment rate will lead to 0.21% decrease in inflation. Furthermore, the positive coefficient in money supply indicated that the rising in money supply have generated the long run negative impacts on inflation. The estimation result reported that with 1% rise in money supply will increase inflation to 0.04%. Also, import playing an important role in affecting the inflation rate where the positive significant result reported that every 1% increase in import will lead to 0.07% increase in inflation.

On top of that, the estimation reveals that the main variable of interest, GST exerts the positive pressure on the consumer price index hence, inflation in Malaysia within the period studied. It is statistically significant and has a positive impact on inflation. Higher sales and services tax revenue while consumption remains constant will raise the price in the economy. This is mainly because the sales and services revenue depends on their respective price. The higher revenue generation is generated through the higher price of goods and services in the market. Therefore, the inflation rate also will increase eventually.

During the introduction ofGST, the businesses and producers tend to shift the burden of the raise in their business cost onto consumer. This is typically happens every time there is a changing involved in their business cycle. Since the mechanism of GST regime is new to Malaysian economy landscape, the business will face the high administrative cost

in their accounting and administrative tax system due to the implementation of GST. The rising cost of doing the business eventually will pass to end consumer in term of high selling price of goods or services. Thus, cost-push inflation will be occurred in the economy during the period.

4.2.3 Short Run Relationship Analysis

Now, with the acceptance of long-run coefficients of the tested variables, the estimation of short-run coefficients can be conducted. The development of Error Correction (ECM) model is needed. An ECM has two important parts. Firstly, it estimates short-run coefficients. Secondly, error correction term (ECT) captures the speed of adjustment whereby short-run dynamics converge to the long-run equilibrium path. Also, according to Banerjee, Lumsdaine, and Stock (1992), it stated that a significant ECT is the further proof of the being of a steady long-term association.

Table 4.5
Error Correction Estimation for ARDL Model

Dependent Variable: ΔCPI_t				
Variable	Coefficient	Std. Error	t-Statistics	Prob. Value
ΔGST_t	0.489915***	0.082895	-5.910078	0.0000
ΔUNK_t	-0.110141***	0.024947	-4.414962	0.0001
ΔMS_t	0.019810***	0.002915	6.794972	0.0000
ΔIMP_t	0.018701***	0.006005	3.114506	0.0000
ECM_{t-1}	-0.474851***	0.055768	-8.514739	00000

Notes: *, ** and *** indicates significant at the 10%, 5% and 1% levels respectively

The final stage of ARDL approach is the determination of the short run dynamics associated with the long run estimation variables in the model. The estimation is achieved by running the Error Correction Model (ECM) based on the ARDL (1, 2, 2, 0, 1).

Table 4.5 represents the short run dynamics model. The finding shows that all the tested variables have short run impact on inflation. Every 1% increase in GST, money supply and import will lead to an increase in inflation to 0.49%, 0.02% and 0.02% respectively. Meanwhile, every 1% increase in unemployment rate, will lead to a decrease in inflation by 0.11%.

The short run coefficient estimates derived from ECM techniques from ARDL model will indicate the speed of adjustment in restoring the equilibrium in dynamic model. The test shows that how quick or slow the relationship returns to its equilibrium path. The result should be statistically significant coefficient with a negative sign. The existence of stable long run relationship is further proof if the ECM value is highly significant.

Table 4.5 shows that the expected sign of the ECM term is highly significant. It reports that the lagged error term has negative sign and it is statistically significant at 1% level. The estimated lagged error term presents that short run deviations will be corrected by 47% towards long run equilibrium path. This means that the adjustment takes place relatively quick. The results also confirm that the long run relationship between inflation and the tested determinants is stable and robust.

4.2.4 Diagnostic Test

Meanwhile, time series diagnostic checking is essential to carried out in order to ensure that the tested model satisfied the classical linear regression model assumption.

Table 4.6
Diagnostic and Stability Test

Diagnostic Tests	F-statistics	Prob. Value
Breusch-Godfrey Serial Correlation LM Test	0.527930	0.8541
Jarque-Bera Normality Test	0.781362	0.676596
Breusch-Pagan-Godfrey Heteroscedasticity Test	1.427863	0.2090
Stability Test		
CUSUM	Stable	
CUSUMQ	Stable	

Table 4.6 presents the diagnostic checking among the tested variables. The analysis shows that there is no serial correlation and heteroscedasticity among the regressors. The error term also reported to be normally distributed where there is no evidence of misspecification of model in inflation analysis. Furthermore, the investigation of long run relationship for policy analysis of the model required a stability test of the coefficients in the model. The stability test of CUSUM and CUSUMQ has also confirmed that the structural break over time is not found for the tested inflation model.

4.2.5 Stability of Parameters

In the final stage, the stability of the long-run coefficients is examined using the CUSUM and CUSUM squares tests. According to Pesaran and Shin (1997), the stability of the estimated coefficients of the error correction model should be empirically investigated. Figure 4.1 is the graphical representation of CUSUM and CUSUMQ statistics. Following Bahmani-Oskooee (2011), the null hypothesis cannot be rejected if the plot of these statistics remains within the critical bound on the 5% significance level. In short, proving the regression equation specified correctly.

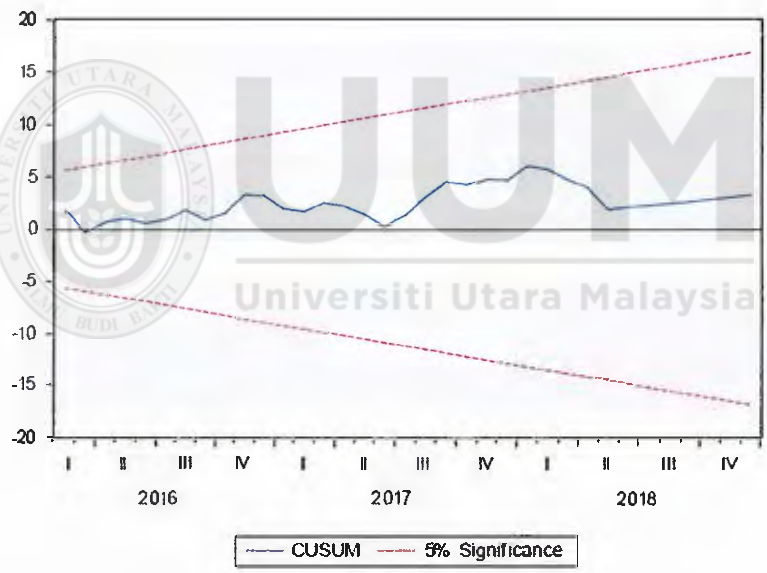

Figure 4.1
Stability Test for Inflation by using CUSUM

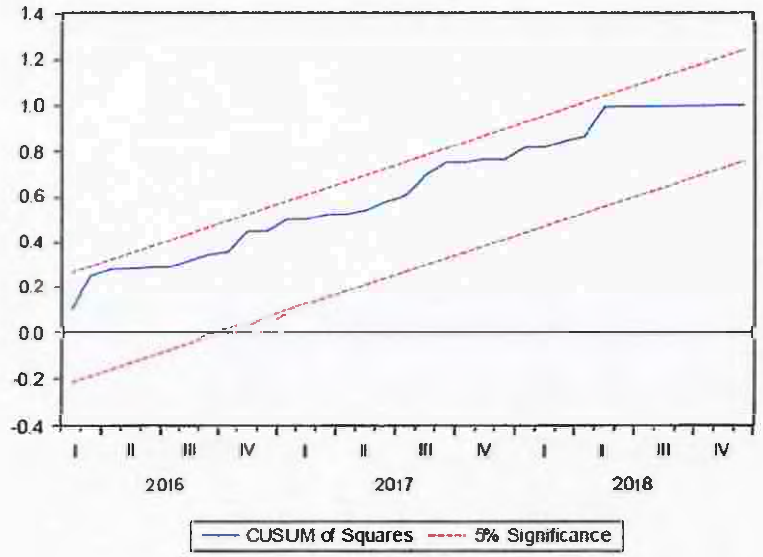

Figure 4.2
Stability Test for Inflation by using CUSUMQ

Figure 4.1 and 4.2 above depicts the examination of parameter stability by using CUSUM and CUSUM square graph. The result generated shown clear evidence for the stability of forecasting since the graphs lie between 5% critical bands. To conclude, both the long term and short term estimation are structurally stable over the sample period in case of Malaysia.

CHAPTER5

CONCLUSION AND RECOMMENDATION

5.0 Introduction

The center problem of the research is the inflationary implication on GST system in Malaysia that could cause the general price hike in the economy. This ramification has long been concerned by Malaysian since the news of GST implementation was reported. The study was focused on Malaysia inflationary impact when GST is introduced. The question is whether GST could lead to goods and services price spikes in Malaysian economy due to the replacement of the new indirect tax system. The research is sought to find out the effects of inflation due to GST in Malaysia economy landscape. In order to seek the answer of the question, the quantitative analysis was adopted through the use of a model. This chapter will focus on the conclusion drawn from the research findings, recommendations and the suggestion for future research.

5.1 Conclusion

The cointegration test via the Autoregressive Distributed Lag (ARDL) bound testing approach was adopted in modeling the short term and long term models of Malaysia inflation. The cointegration is established between inflation and the respective explanatory variables. The cointegration results revealed that the coefficients of proportion of inflation from GST, unemployment rate, money supply and imports are significant in the long run and short run.

The test also revealed that a positive relationship occurred between inflation and GST, money supply and import in the long run and short run. In contrary, the inverse relationship between inflation and unemployment rate occurred in both long and short run.

In conclusion, the study revealed that the inflationary pressures in Malaysia was influenced both from fiscal and monetary factors under the period of study. The main findings revealed that GST was significantly effects the Malaysia inflation in long run and short run statistically.

Based on the estimation period, we can say that during the short term in line with the transition period of the replacement of GST from SST, the introduction of GST is significant affected the inflation rate in Malaysia. This means that the implementation of GST is accompanied with a one-time increase in price level which reflected the cost of living. Nevertheless, the GST impact on prices is at 0.49%.

Theoretically, taxation will eventually lower the household disposable income and businesses revenue that can be utilized for private consumption and investment. The lower private demand for goods and services shall give demand-side pressure on the rising of prices in economy. Besides, higher aggregate tax revenue through a higher tax rate imposition would therefore lower the aggregate demand in an economy as well. Hence, the imposition of any tax is actually will be bome by consumers and producers. For consumers, they will face the burden of higher prices and lower quantities of goods and services consumed. For producers, the burden of lower yields happened when tax is imposed. As we noted that, GST is a natural for cost in the supply chain, thus, it is a cost

saving for the companies to offset the revenue loss during the period of GST introduction.

However, many argued that there will be a second round effect of inflation due to GST in the long term. Upon completing the estimation results, GST will contribute to 0.11% increase in inflation for the studied period for the long run effects. Based on the Economic Report by Central Bank of Malaysia on 2015, the increase of inflation happened based on goods and services categories calculated by CPI on each basket of goods and services existed during the pre and post GST implementation. Nevertheless, the overall impact is still contained as GST only contributed 0.7% point to headline inflation during the initial period of GST role.

GST indeed has a huge possibility to increase the rate of inflation in the implemented country but the GST shall contribute the minimal impact on Malaysia inflation. However, some also argued that there will be a second round impact of GST implementation in term of rising cost to the businesses. This might occurred when the workers will demand for higher wages in order to offset the raising of cost of living. As the result, the cost for businesses will be increased and this will cause the businesses to pass the burden onto consumer by offering a higher price of goods or services. Hence, the cost-push inflation will be happened.

All in all, the degree of inflation is a hard-won situation to measure accurately during the initial period of GST implementation since the households are often to adjust their spending behavior due to distortion in their spending power as a result of the increase in

price in the economy hence the inflation impact from GST is difficult to accurately determine during the transition period of GST tax system.

5.2 Recommendation

The intention for Malaysian Government in diversify its revenue sources has brought the fiscal reformation through the introduction of GST system onto its economy landscape. The introduction of GST is merely a replacement indirect tax system that has long existed namely SST. With the implementation of GST system, the government also hopes to seek additional revenue collection in order to combat its budget deficit. Despite the revenue generation, GST system also was introduced to eliminate the weaknesses found in the previous sales tax and services tax.

Despite the negative perspective of economic agent towards GST system, the GST collection is becoming the major contributions to Malaysian revenue. As per record, the revenue collection from GST is amounted RM27 billion in 2015 and had increased to approximately RM 38 billion in 2016. It also reported that the GST revenue for year end 2017 is expected to gain more than RM42 billion. Due to GST revenue contributions, Malaysian Prime Minister, Datuk Seri Najib Tun Razak informed that GST has helped Malaysia to reduce its fiscal deficit from 6.7% in 2009 to 3.1% in 2016 (Eugene Mahalingam 2017).

In order to ensure the rising cost of living due to higher prices is under control for households especially those in lower and middle income groups, the government needs to implement some measures in order to combat the rise in price of goods and services in the economy and hence, inflation. In different perspective, the government also needs to

ensure that the welfare of the businesses also will not be affected by the new tax system. In general, the least government can do is to control the price in the economy. Historically, Malaysian Government already took the policy that could prevent the increase of price level by using Price Control Act that was enacted in 1946. Tbe price control mechanism is obviously noticeable especially during the festive session.

In the recent years, the Malaysian Government also had introduced the new measures for price controlling namely Anti-Profiteering Act 2011 in ensuring that the price increases is not excessive. Based on this act, the government has the rights to regulate the maximum profit margin rate for a business. It was introduced and implemented to curb the price hikes associates with GST implementation. In order for the measures to effectively take place, the government needs to frequently monitor the compliance of the businesses towards the policy implementation. A higher fines and penalties shall be taken for the businesses that are refused to compile with the price rules and regulations.

The price control regulations through Anti-Profiteering Act is obviously beneficial for consumers rather than for businesses. The maximum margin that was set up by the government has forced the businesses to absorb the rising cost of doing their businesses. The profit gaining is absolutely will go down as the profit could not be increased beyond the regulations measures. Hence, businesses were prevented to passing the higher cost onto consumers in a fair way. The acts only will be beneficial for consumers in a short run.

Instead, the regulations and protection policy is harmful in the long run since it encourages the business closure especially small and medium firms. Thus in term of

businesses perspective, the government also needs to regulate a more liberal policy to combat the issues. In addition, the government can collaborate with the workers unions and companies to raise productivity level among the workers. To achieve this goal, the business process can be improved in reducing the rising costs by uplifting the workers skill sets. With the newly enhanced skills and production process, the businesses would be able to cope with higher business cost and therefore can prevent the business to pass the additional cost to consumers as end users.

Moreover, the GST system also involved a new administrative process of the tax system. As a result, this lead to the additional cost for the firms to run the new tax mechanism in their business. With this additional cost, the business will tend to increase the price of goods and services in the market. At the end, the consumers will face the burden in term of expensive price of goods and services offered. Thus, the government needs to help the businesses especially the small and medium businesses by providing the comprehensive guidelines and administrative tax procedure thoroughly. A comprehensive guidelines and procedures offered by the government through the RMCD will eventually lower the cost for the businesses in seeking the new knowledge regarding the procedure involved in the new tax system.

5.3 Suggestion for Future Research

This study had focus on the impact of inflation towards the newly introduced GST system in Malaysia. Inflation is one of the economic indicators that can contribute to the condition of an economy in a country. Other than inflation, there are several potential impacts of the implementation of GST in term of economic growth and regressisvity of

the GST system. Future research can consider to finding the possible impacts of those variables in Malaysian economy landscape.

5.4 Limitation of Study

As we noticed, the data for GST revenue is very limited for the researcher to be able to analyze the objective of the study by using a time series framework. Thus, the researcher has to do some frequency conversion on the tested variables including GST data to enlarge the series observations. Although the research may suffer from such limitation, it also however can serve as a guideline or contributions for future researches of the same field.

REFERENCES

"How Does GST Work". (2012, February 2). Royal Malaysian Customs Department. Retrieved May 15, 2017 from http://www.gst.customs.gov.my

Abbas Valadkhani and Allan P. Layton. (2014). Quantifying the Effect of the Gst on Inflation in Australia's Capital Cities: An Intervention Analysis. Australian Economic Review, Vol. 37, No. 2, pp. 125-138, June 2004. Retrieved May 20, 2018 from https://papers.ssm.com/sol3/papers.cfm?abstract_id=563021

Abdul Aziz, A. B. (2013). Kepentingan Cukai Kepada Rakyat Dan Negara. Sinar Harian. Kuala Lumpur. Retrieved May 15, 2018 from http://www.sinarharian.com.my.

Adam, M., & M. Yusof, N. (2018). A Comparative Study on the Burden of Tax Compliance Costs amongst GST Registered Companies in Malaysia and Abroad. Journal of Science, Technology and Innovation Policy, 3(2). Retrieved from http://www.jostip.org/index.php/jostip/article/view/64

Adeel A. Siddiqui. (2011). Inflation is a Combine effect of Demand Pull and Cost Push Factors: Evidences from Pakistan Economy. Institute of Business Management, Pakistan. Retrieved May 15, 2018 from https://adeelamirsiddiqui.files.wordpress.com/2013/04/2-inflation-in-pakistan-is-a-combine-effect-of-demand-pull-and-cost-push-factors.pdf

Afshari, Z. and Sadeghi, F. (2010). Estimating the Inflationary Effect of Implementing Value Added Tax in Iran (An Input –Output Approach). International Input-Output Association. Retrieved May 15, 2017 from http://www.iioa.org/

Alan A. Tait. (1991). Value-Added Tax; Administrative and Policy Issues. IMF Occasional Papers from International Monetary Fund International Monetary Fund, Washington, DC USA. Retrieved May 15, 2018 from https://econpapers.repec.org/paper/imfimfocp/88.htm

Andy Scott. (2009). Understanding China's Value-Added Tax System. . Retrieved May 15, 2017 from http://www.paulgillis.org/understanding-chinas-value.pdf

Asmuni, Shahariah, Yusoff, Sabariah and Nur Syuhadah Mohd. (2017). Acceptance towards Goods and Services Tax (GST) among Local Business Communities. Journal of Emerging Economies & Islamic Research, Vol. 5 Issue Special Issue, p62-72. 11p.

Bank Negara Malaysia. (2010). Annual Report. Retrieved May 15, 2017 from http://www.bnm.gov.my/files/publication/ar/en/2010/ar2010_book.pdf

Bank Negara Malaysia. (2015). Annual Report. Retrieved May 15,2017 from http://www.bnm.gov.my/files/publication/ar/en/2012/ar2012_book.pdf

Bibhu Prasad Sahoo , Neeraj Jain, Garima Jain. A study on Impact of Implementation of GST on Inflation in selected countries: An Intervention Model. Asian J. Management; 2017; 8(2):246-250.

Carbonnier, C., 2005. Is tax shifting asymmetric? Evidence from French VAT reforms 1995-2000. Paris- Jourdan Sciences Economiques Working Paper, WP/2005/09

Carroll, R., Cline, R., Neubig, T., Diamond, J., & Zodrow, G. (2010). The macroeconomics effects of an add-on value adde tax. National Retail Federation. Retrieved May 15, 2017 from http://bakerinstitute.org/publications/TEPP-pub-NRFValueAddedTax-l00710.pdf

Caspersen, E., & Metcalf, G. (1994). Is a value added tax regressive? Lifetime incidence measures. National Tax Joumal, 47(4), 46-731.

Christina & David. (1997). Reducing Inflation: Motivation and Strategy. NBER Books from National Bureau of Economic Research, Inc National Bureau of Economic Research, 1050 Massachusetts Avenue Cambridge, MA 02138, U.S.A. Retrieved May 15, 2018 from https://econpapers.repec.org/bookchap/nbrnberbk/rome97-l.htm

Dániel Felcser. (2013). How should the central bank react to the VAT increase?. MNB Bulletin, January 2013. Retrieved May 20, 2018 from https://www.mnb.hu/letoltes/felcser.pdf

David Romer. (2012). Advanced Macroeconomics. McGraw-Hill Series Economics.

Dr Lim Kim-Hwa and Ms Ooi Pei Qi. (2013). Implementing Goods and Services Tax in Malaysia. Penang Institute. Retrieved May 20, 2018 from https://penanginstitute.org/gst/

Ethan Spielman. (2018). Direct Costs vs. Indirect Costs: Understanding Each. Business News Daily. Retrieved May 15, 2018 from https://www.businessnewsdaily.com/5498-direct-costs-indirect-costs.html

Eugene Mahalingam. (2017). GST revenue to exceed RM42bil this year. The Star Online. GST revenue to exceed RM42bil this year. Retrieved May 20, 2018 from alculatorsoup.com/calculators/math/number-word-notation-to-standard.php

Fintan Ng. (2016). A slowing Malaysian economy. The Star Online. . Retrieved May 20, 2018 from https://www.thestar.com.my/business/business-news/2016/03/07/a-slowing-economy/

Fullerton, D. and Metcalf, G.E. (2002). Tax Incidence. A. Auerbach and M. Feldstein ed.,

Gautier, E., and Lalliard, A. (2014). How do VAT changes affect inflation in France? Quarterly Selection of Articles, 32.

Gelardi, G. M. A. (2010). Value added tax and consumer spending: A graphical descriptive analysis. Asian Journal of Finance & Accounting, 5(1), ISSN: 1946-052X.

Geoff Riley. (2008). Cost push & demand pull inflation. Tutor2u, Boston, USA. Retrieved May 15, 2018 from https://www.tutor2u.net/economics/blog/revision-cost-push-demand-pull-inflation

Glenn P. Jenkins and Rup Khadka (1998). Value-Added Tax Policy and Implementation In Singapore Retrieved May 15, 2017 from Research Gate website: https://www.researchgate.net/publication/241118172_Valueadded_tax_policy_and_implementation_in_Singapore

Glenn P. Jenkins and Rup Khadka. (2000). Consulting Assistance on Economic Reform II. Retrieved May 15, 2017 from http://pdf.usaid.gov/pdf_docs/Pnack677.pdf

Godly Otto and Wilfred I. Ukpere. (2015). The Impact of Fiscal Policy on Inflation in Nigeria. Risk governance & control: financial markets & institutions, Volume 5, Issue 1, 2015, Continued – 1

Gordon, R. H. (2010), Taxation and Corporate use of Debt: Implications for Tax Policy, National tax Journal, 60 (1), 65-84.

Handbook of Public Economics, Vol. 4. Amsterdam: Elsevier Science B.V.

Hooper, P., & Smith, K. A. (1997). A Value-Added Tax In ! e U.S. : An Argument In Favor. Business Horizon, 78-83.

Ilias, Suhaimi, Zamros Dzulkafli, Ramesh Lankanathan and William Poh; Malaysia: GST- Early Impact Assessment, Maybank KimEng, April 2015, Retrieved May 20, 2018 Retrieved May 20, 2018 from http://info.maybank2u.com.sg/pdf/investment-insurance/misc/misc-15-04-15-3.pdf

Inland Revenue Authority of Singapore (IRAS). (2009). Historical GST Rates. Retrieved May 15, 2018 from https://www.iras.gov.sg/irashome/GST/GST-registered-

businesses/Working-out-your-taxes/When-to-Charge-Goods-and-Services-Tax/Prevailing-rate-of-7-/

Isabelle Lai. (2014). GST will lead to reduction in Malaysia's shadow economy. The Star Online, Kuala Lumpur. Retrieved May 15, 2018 from https://www.thestar.com.my/business/business-news/2014/09/16/gst-to-stabilise-govt-revenue.

Jain, T.R. & Khanna, O.P. (2010). Macroeconomics and Elementary Statistics. New Delhi: VilmaKumari Jain Publications.

Jalil Totonchi. (2011). Macroeconomic Theories of Inflation. 2011 International Conference on Economics and Finance Research, IPEDR vol.4 (2011) © (2011) IACSIT Press, Singapore

Jeffrey Parker. (2010). Models of Unemployment. Economics 314 Coursebook, 2010. Retrieved May 20, 2018 from http://www.reed.edu/economics/parker/s10/314/book/Ch14.pdf

Jhingan, M. L. (2008). Monetary Economics, Sixth Edition, Vrinda Publications Ltd, Delhi.

John E. Anderson. (2012). Public Finance. Cengage Learning.

Jonneke Dijkstra. (2013). The influence of the VAT increase on consumer prices. Retrieved May 15, 2018 from https://thesis.eur.nl/pub/14962/Dijkstra-J.pdf

Kelmer Group International Business Cosultant. (2018). VAT changes in China starting from May. Retrieved May 15, 2018 from http://www.kelmer.com/blog/item/20-china-reduces-vat-rates-on-certain-products-and-services.html

Kiasutrader. (2015). Consumer - Marching Beyond GST. Kenangan Research and Investment. Retrieved May 15, 2017 from http://klse.i3investor.com/blogs/kenangaresearch/74192.jsp

Kolahi, Seyed Hossein Ghaffarian and Mohd Noor, Zaleha (2016) The effect of value add tax on economic growth and its sources in developing countries. International Journal of Economics and Finance, 8 (1). pp. 217-228. ISSN 1916-971X; ESSN: 1916-9728

Kotler, P. and Armstrong, G. (2010). Principles of Marketing; 12th Edition, Prentice Hall

KPMG. (2011). Netherlands: Country VAT/GST essentials. Retrieved May 15, 2017 from KPMG Global Indirect Tax website: www.kpmg.com/Global/en/...gst.../netherlands-2011-vat-gst-essentials.pdf

Lau Zheng Zhou, Jarren Tam and Jordan Heng-Contaxis. The Introduction Ofgoods And Services Tax in Malaysia: A Policy Analysis. CPPS Policy Paper Series, October 22, 2013. Retrieved May 20, 2018 from http://cpps.org.my/wp-content/uploads/2017/08/23101356CPPS-Policy-Paper-GST.pdf

Le, M. T. (2003). Value Added Taxation: Mechanism, Design, and Policy Issues. Retrieved May 20, 2018 from http://citeseerx.ist.psu.edu/messages/downloadsexceeded.html

Lidiana Rosli. (2016). No increase in GST percentage for 2017. The Star Online. Retrieved May 15, 2018 from https://www.nst.com.my/news/2016/08/164198/no-increase-gst-percentage-2017

Lidiana Rosli. (2016, August 10). Malaysia: After GST, it's time to tackle the tax dodgers. News Straits Times.

Loo Ern Chen and Mohd Shukry Bin Md Taib. Goods and Services Tax (GST): Challenges Faced by Business Operators in Malaysia. The 2016 4th International Conference on Governance and Accountability (2016 ICGA), Volume 36, 2017. Retrieved May 20, 2018 from https://www.shs-conferences.org/articles/shsconf/abs/2017/04/shsconf_icga2017_00027/shsconf_icga2017_00027.html

M. Hashem Pesaran and Yongcheol Shin. (1997). An Autoregressive Distributed Lag Modeling Approach to Co-integration Analysis. Retrieved May 20, 2018 from https://www.researchgate.net/publication/4800254_An_Autoregressive_Distributed_Lag_Modeling_Approach_to_Co-integration_Analysis

Mansor, M., Tayib, M. & Yusof, R. (2005). Malaysian indirect tax administration system: An analysis of efficiency and taxpayers' perceptions. IJMS, 12 (2), 19-40.

Martina Dalic. (1997). Price Effects of VAT Introduction in Croatia. Occasional paper series 04, Institute of Public Finance. Retrieved May 15, 2018 from https://ideas.repec.org/p/ipf/occasi/4.html

Martina Dalić. (1997). Price effects of VAT introduction in Croatia. Institute of Public Finance Croatia, 4, 20-39.

Maryam Jameelah Hashim, Idris Osman and Nura Lina Elias. The Determinants Of Inflation In Malaysia. 3rd International Conference on Accounting, Business and

Economics (ICABEC2014). Retrieved May 20, 2018 from https://www.researchgate.net/publication/283291579_THE_DETERMINANTS_OF_INFLATION_IN_MALAYSIA

Masayuki Tamaoka.(1994).The Regressivity of a ValueAdded Tax: Tax Credit Method and Subtraction Method–A Japanese Case Fiscal Studies, 15(2), 57-73.

Matti Virén. (2009). Does the value-added tax shift to consumption prices?. Department of Economics, and Public Choice Research Centre, 20014 University ofTurku, Finland. Retrieved May 20, 2018 from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.668.7028&rep=rep1&type=pdf

Mohamed Ariff. (2009). Why GST is a must. Malaysian Institute Of Economic Research Institut Penyelidikan Ekonomi Malaysia Retrieved May 15, 2018 from https://www.mier.org.my/newsarticles/archives/pdf/drariff23_11_2009.pdf

Mohd Asrul Hery Ibrahim, Mohd Rushdan Yasoa, Mohd Safwan Ghazali and Cherine Lim. (2015). Public Finance Reform In Malaysia: Issues and Challenges. Retrieved May 15, 2018 from http://umkeprints.umk.edu.my/5016/1/Conference%20Paper%2026%20%20ISEB%202015.pdf

Mohd Rizal Palil, Rosiati Ramli, Ahmad Fariq Mustapha and Norul Syuhada Abu Hassan.(2013). Elements of Compliance Costs: Lesson from Malaysian Companies towards Goods and Services Tax (GST). Asian Social Science, Vol. 9, No. 11; 2013.

Moomal, A., & Zakaria, Z. (2014). Awareness, Acceptance and Expectations of Malaysia Consumers Towards Good and Service Tax (GST). Journal of Contemporary Management Sciences, 4(2), 15–27.

Mukul G. Asher. (1999). Tax Reform in Singapore. Retrieved May, 15, 2017 from Murdoch University website: https://www.murdoch.edu.au/Research-capabilities/Asia-Research-Centre/_document/working-papers/wp91.pdf

Narayanan, S. (1991). The Value Added Tax in Malaysia the Rationale, Design & Issues. Kuala Lumpur: Institut Kajian Strategik dan Antarabangsa (ISIS) Malaysia.

Nicole Jonker, Carsten Folkertsma and Harry Blijenberg. (2004). An empirical analysis of price setting behaviour in the Netherlands in the period 1998-2003 using micro data. Working Paper Series from European Central Bank 60640 Frankfurt am Main, Germany, No 413. Retrieved May 20, 2018 from https://econpapers.repec.org/paper/ecbecbwps/2004413.htm

Nor Zahidi Alias. (2014). Hard decision ahead. Malaysian Business, 26-35.

Paul Previtera and Brandon Boyle. (2011). Japan's Consumption Tax: Lessons for the United States. Retrieved May 15, 2017 from http://www.taxhistory.org/www/freefiles.nsf/Files/PREVITERA-BOYLE 24.pdf/$file/PREVITERA-BOYLE-24.pdf

Peter Howells. (2010). The Money Supply In Macroeconomics. Nova Science Publishers, Inc.

Predeeben Kannan. (2010). The Changing Face of Taxation in Malaysia. Federation of Investment Managers Malaysia, Kuala Lumpur. Retrieved May 15, 2018 from https://www.fimm.com.my/investment-strategies/3_May2010_khoochuankeat.pdf

Rahmah Ghazali. (2017). Govt says no plans to increase GST rate. The Star Online. Retrieved May 15, 2018 from https://www.thestar.com.my/news/nation/2017/11/29/govt-no-plan-raise-gst-rate/

Raja Kumaran. (2017). GST – How is Malaysia Coping?. PricewaterhouseCoopers Taxation Services. Retrieved May 15, 2018 from http://icoec.my/download/icoec_2017/ICoEC2017_141.pdf

Rattanawadee Ruangmalai. (1993). Value Added Tax In Thailand. Retrieved May 15, 2017 from www.austlii.edu.au/au/journals/RevenueLawJl/1993/11.pdf

Robert Kirkby. (2013). The Case for Tax-Adjusted Inflation Targeting. Retrieved May 20, 2018 from http://www.iae.csic.es/investigatorsMaterial/a137316014471325.pdf

Roger S. Muir. (1993). The NZ Goods and Services Tax. Retrieved May 15, 2017 from http://epublications.bond.edu.au/rlj/vol3/iss2/2/

Roshaiza Taha and Nanthakumar Loganathan (2008). Causality Between Tax Revenue And Government Spending In Malaysia. The International Journal of Business and Finance Research, Vol 2, issue 2, 63-73. issue 2, 63-73. The Institute for Business and Finance Research.

Ruebling, E. C. (1973). A value added tax and factors affecting its economic impact. Federal Reserve Bank of St. Louis Review, September 1973, pp. 15-19.

Salla Simola. (2012). VAT reduction and tax incidence: Evidence from aFinnish VAT reform on restaurant services. Department of Economics, Aalto University. Retrieved May 15, 2018 from http://epub.lib.aalto.fi/en/ethesis/pdf/12751/hse_ethesis_12751.pdf

Sam Reinhardt and Lee Steel. (2006). A Brief History Of Australia's Tax System. Retrieved May 15,2017 from

https://archive.treasury.gov.au/documents/1156/HTML/docshell.asp?URL=01_Brief_History.asp#P8_113

Sarili, A. M. (2000). The effects of value added tax on Turkish Economy. Retrieved May 20, 2017 from http://e-dergi.atauni.edu.tr/index.php/IIBD/article/viewFile/3486/3315

Sarili, A. M. (2000). The effects of value added tax on Turkish Economy. Retrieved May 20, 2018 from http://e-dergi.atauni.edu.tr/index.php/IIBD/article/viewFile/3486/3315

Secapramana, V. H. (2000). Model Dalam Strategi Penetapan Harga. Unitas, 9(1), 30–43.

Shamsuddin, A., Ruslan, M. I. M., Halim, A. A., Zahari, N. F., & Fazi, N. F. M. (2014). Educators' Awareness and Acceptance Towards Goods and Services Tax (GST) Implementation in Malaysia: A Study in Bandar Muadzam Shah, Pahang. International Journal of Business, Economics, and Law, 4(1), 1-10.

SK Singh. (2008). Public Finance in Theory & Practice. S. Chand Publishing.

Stephan Danninger ; Alina Carare. (2009). Inflation Smoothing and the Modest Effect of VAT in Germany. Retrieved May 20, 2018 from https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Inflation-Smoothing-and-the-Modest-Effect-of-VAT-in-Germany-22100

Stiglitz, J.E. 1997. Economics (2nd ed.). New York: W.W. Norton & Company Inc.

Suan Teck Kin. (2015). Quarterly Global Outlook: Singapore Focus. UOB Global Economics & Markets Research.

Surbhi S. (2015). Difference Between Direct Cost and Indirect Cost. Key Difference. Retrieved May 15, 2018 from https://keydifferences.com/difference-between-direct-and-indirect-cost.html

Syed A. Basher. (2008). Is VAT Inflationary? Retrieved May 15, 2018 from https://www.src.gov.sc/pages/pressreleases/VATInflationary.aspx

Tait, Alan, Robert Ebel, and Tuan Minh Le. 2005. "Value-Added Tax, National." In The Encyclopedia of Taxation & Tax Policy. Eds. Joseph J. Cordes, Rob-ert D. Ebel, and Jane G. Gravelle. Washington: The Urban Institute Press.

Tejvan Pettinger. (2016). Causes of inflation. Retrieved May 15, 2018 from from http://www.economicshelp.org

Thomas A. Weber. (2012). Price Theory in Economics. OXFORD HANDBOOK ON PRICING MANAGEMENT, Ö. Özer and R. Phillips, eds., Oxford University Press, pp. 281--339, 2012. Retrieved May 15, 2018 from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1270297

Tran-Nam B. (2000). The implementation costs of the GST in Australia: Concepts, preliminary estimates and implications. Journal of Australian Taxation, 3(5), 331-343.

Tran-Nam, Dr Binh. (2000). The Implementation Costs of the GST in Australia: Concepts, Preliminary Estimates and Implications. JlATax 23; (2000) 3(5) Journal of Australian Taxation 331

Utgoff, Kathy Classon, and Brechling, Frank. (1979). Taxes and inflation. Carnegie-Rochester Conference Series on Public Policy, Volume 11, 1979, Pages 223-248. Retrieved May 15, 2018 from https://www.sciencedirect.com/science/article/pii/0167223179900435

Valadkhani, A., and Layton A. P. (2004). Quantifying the Effect of GST on Inflation in Australia's Capital Cities: An Intervention Analysis. University of Wollongong Research Online.

Victor Eng Lye. (1997). An Analysis of Tax Reform in Malaysia. University of Bristol (Doctoral Dissertation). Retrieved May 15, 2018 from https://research-information.bristol.ac.uk/en/theses/an-analysis-of-tax-reform-in-malaysia(d653ed24-148f-44e6-8b88-6bc2fd0e71ae).html

Walgenbach, P. H., Dittrich, N. E. and Hanson, E. I.(1973). Financial Accounting, New York: Harcourt Brace Javonovich, Inc.

Yeung, R. (2010). A Critical Analysis of a Goods and Services Tax in Hong Kong. Retrieved May 15, 2017 from Middlesex University website: https://eprints.mdx.ac.uk/7249/1/Yeung-Dprof.pdf

Zahoor Hussain Javed, Muhammad Farooq and Shama Akram. (2010). Cost-push shocks and inflation: An empirical analysis from the economy of Pakistan. Department of Economics, GC University, Faisalabad, Pakistan, Vol.2 (12), pp. 308-312. Retrieved May 15, 2018 from http://www.academicjournals.org/journal/JEIF/article-abstract/8DAF0322921